



0060058

24 June 2003

Mr. Steve Trent
Fluor Hanford Inc.
825 Jadwin Ave.
Richland, WA 99352

Subject: Contract No. 630
Analytical Data Package



Dear Mr. Trent:

Enclosed are the hard copy analytical reports for the batch number/fraction indicated (marked X) in the following table:

LvLI Batch #	0305L329
SDG #	H2194
SAF #	F03-006
Date Received	5-02-03
# Samples	6
Matrix	Soil
Volatiles	X
Semivolatiles	X
Pest/PCB	X
DRO/GRO/KRO	X
Herbicides	X
GC Alcohol	X
Metals	X
Inorganics	X

The electronic data deliverable (EDD) will be emailed shortly. If you have any questions, please don't hesitate to contact me at (610) 280-3012.

Sincerely,
Lionville Laboratory Incorporated

Orlette S. Johnson
Project Manager

RECEIVED
AUG 11 2003
EDMC

Lionville Laboratory, Inc.
VOA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2194

DATE RECEIVED: 05/02/03

LVL LOT # :0305L329

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B16W79	001	S	03LVJ055	04/28/03	N/A	05/16/03
B16W80	002	S	03LVJ055	04/28/03	N/A	05/16/03
B16W81	003	S	03LVJ055	04/29/03	N/A	05/16/03
B16W82	004	S	03LVJ055	04/29/03	N/A	05/16/03
B16W83	005	S	03LVJ055	04/29/03	N/A	05/16/03
B16W90	006	S	03LVJ055	04/28/03	N/A	05/16/03
B16W90	006 MS	S	03LVJ055	04/28/03	N/A	05/16/03
B16W90	006 MSD	S	03LVJ055	04/28/03	N/A	05/16/03

LAB QC:

VBLKSX	MB1	S	03LVJ055	N/A	N/A	05/16/03
VBLKSX	MB1 BS	S	03LVJ055	N/A	N/A	05/16/03





Client: TNU-HANFORD B03-006
LVL #: 0305L329
SDG/SAF # H2194/B03-006

W.O. #: 11343-606-001-9999-00
Date Received: 05-02-2003


GC/MS VOLATILE

Six (6) soil samples were collected on 04-28,29-2003.

The samples and their associated QC samples were analyzed according to criteria set forth in Lionville Laboratory OPs based on SW 846 Method 8260B for TCL volatile target compounds on 05-16-2003.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
2. Samples were analyzed within holding time.
3. Non-target compounds were not detected in the samples.
4. All surrogate recoveries were within EPA QC limits.
5. All matrix spike recoveries were within EPA QC limits.
6. All blank spike recoveries were within EPA QC limits.
7. The method blank contained the common laboratory contaminants Methylene Chloride and Acetone at levels less than the CRQL.
8. Internal standard area and retention time criteria were met.
9. "I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."


J. Michael Taylor
President
Lionville Laboratory Incorporated

6/2/03
Date

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The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 18 pages.

GLOSSARY

DATA QUALIFIERS

- U** = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.
- J** = Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B** = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.
- E** = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- D** = Identifies all compounds identified in an analysis at a secondary dilution factor.
- I** = Interference.
- NQ** = Result qualitatively confirmed but not able to quantify.
- A** = Indicates that a TIC is a suspected aldol-condensation product.
- N** = Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.
- X** = This flag is used for a TIC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closest internal standard).
- Y** = Additional qualifiers used as required are explained in the case narrative.

mmz\10-94\gloss.bna



GLOSSARY

ABBREVIATIONS

BS	=	Indicates blank spike in which reagent grade water is spiked with the CLP matrix spike solutions and carried through all the steps in the method. Spike recoveries are reported.
BSD	=	Indicates blank spike duplicate.
MS	=	Indicates matrix spike.
MSD	=	Indicates matrix spike duplicate.
DL	=	Suffix added to sample number to indicate that results are from a diluted analysis.
NA	=	Not Applicable.
DF	=	Dilution Factor.
NR	=	Not Required.
SP, Z	=	Indicates Spiked Compound.

mmz\10-94\gloss.bna



TECHNICAL FLAGS FOR MANUAL INTEGRATION

Manual quan modifications or integrations are performed routinely to improve the data quality for a variety of technical reasons. Documentation of these modifications should be clear and concise. The following "flags" are used to indicate the technical reasons for quan modifications:

- MP - Missed Peak: manually added peak not found by automatic quan program.
- PA - Peak Assignment: quan report was changed to reflect correct peak assignment.
- RI - Routine Integration: routine integrations are performed for some analytes that are consistently integrated improperly by the automatic integration programs. Examples are the dichlorobenzene isomers on the VOA packed column and benzo(b)fluoranthene/benzo(k)fluoranthene which are poorly resolved on the BNA column.
- SP - Split Peak: the automatic integration improperly split the peak; a manual integration was performed to get the correct area.
- CB - Coelution/Background: peak was manually integrated to eliminate contribution from coeluting compounds, background signal, or other interference.
- PI - Proper Integration: a peak with poor or inconsistent integration (e.g., excessive tail) was properly integrated manually.

Lionville Laboratory, Inc.

Volatiles by GC/MS, HSL List

Report Date: 05/30/03 11:39

RFW Batch Number: 0305L329

Client: TNUHANFORD F03-006 H2194 Work Order: 11343606001 Page: 1a

Cust ID:		B16W79	B16W80	B16W81	B16W82	B16W83	B16W90
Sample RFW#:		001	002	003	004	005	006
Information Matrix:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
D.F.:		1.04	1.11	1.14	1.04	1.11	1.02
Units:		ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Toluene-d8		98 %	101 %	100 %	102 %	100 %	101 %
Surrogate Bromofluorobenzene		104 %	106 %	106 %	107 %	107 %	109 %
Recovery 1,2-Dichloroethane-d4		105 %	103 %	110 %	108 %	112 %	114 %
-----fl-----fl-----fl-----fl-----fl-----fl-----fl-----							
Chloromethane		11 U	12 U	12 U	11 U	12 U	11 U
Bromomethane		11 U	12 U	12 U	11 U	12 U	11 U
Vinyl Chloride		11 U	12 U	12 U	11 U	12 U	11 U
Chloroethane		11 U	12 U	12 U	11 U	12 U	11 U
Methylene Chloride		6 U	6 U	2 JB	2 JB	3 JB	3 JB
Acetone		13 B	7 JB	8 JB	9 JB	10 JB	7 JB
Carbon Disulfide		6 U	6 U	6 U	6 U	6 U	6 U
1,1-Dichloroethene		6 U	6 U	6 U	6 U	6 U	6 U
1,1-Dichloroethane		6 U	6 U	6 U	6 U	6 U	6 U
1,2-Dichloroethene (total)		6 U	6 U	6 U	6 U	6 U	6 U
Chloroform		6 U	6 U	6 U	6 U	6 U	6 U
1,2-Dichloroethane		6 U	6 U	6 U	6 U	6 U	6 U
2-Butanone		11 U	12 U	12 U	11 U	12 U	11 U
1,1,1-Trichloroethane		6 U	6 U	6 U	6 U	6 U	6 U
Carbon Tetrachloride		6 U	6 U	6 U	6 U	6 U	6 U
Bromodichloromethane		6 U	6 U	6 U	6 U	6 U	6 U
1,2-Dichloropropane		6 U	6 U	6 U	6 U	6 U	6 U
cis-1,3-Dichloropropene		6 U	6 U	6 U	6 U	6 U	6 U
Trichloroethene		6 U	6 U	6 U	6 U	6 U	6 U
Dibromochloromethane		6 U	6 U	6 U	6 U	6 U	6 U
1,1,2-Trichloroethane		6 U	6 U	6 U	6 U	6 U	6 U
Benzene		6 U	6 U	6 U	6 U	6 U	6 U
Trans-1,3-Dichloropropene		6 U	6 U	6 U	6 U	6 U	6 U
Bromoform		6 U	6 U	6 U	6 U	6 U	6 U
4-Methyl-2-pentanone		11 U	12 U	12 U	11 U	12 U	11 U
2-Hexanone		11 U	12 U	12 U	11 U	12 U	11 U
Tetrachloroethene		6 U	6 U	6 U	6 U	6 U	6 U
1,1,2,2-Tetrachloroethane		6 U	6 U	6 U	6 U	6 U	6 U
Toluene		6 U	6 U	6 U	6 U	6 U	6 U

* = Outside of EPA CLP QC limits.

Cust ID: B16W79 B16W80 B16W81 B16W82 B16W83 B16W90

RFW#: 001 002 003 004 005 006

Chlorobenzene	6 U	6 U	6 U	6 U	6 U	6 U
Ethylbenzene	6 U	6 U	6 U	6 U	6 U	6 U
Styrene	6 U	6 U	6 U	6 U	6 U	6 U
Xylene (total)	6 U	6 U	6 U	6 U	6 U	6 U
N-butylbenzene	6 U	6 U	6 U	6 U	6 U	6 U

*= Outside of EPA CLP QC limits.

Report Date: 05/30/03 11:39

Client: TNUHANFORD F03-006 H2194 Work Order: 11343606001 Page: 2a

[illegible]

*= Outside of EPA CLP QC limits.

Cust ID: B16W90 B16W90 VBLKSX VBLKSX BS

RFW#: 006 MS 006 MSD 03LVJ055-MB1 03LVJ055-MB1

	94	%	107	%	5	U	94	%
Chlorobenzene	6	U	5	U	5	U	5	U
Ethylbenzene	6	U	5	U	5	U	5	U
Styrene	6	U	5	U	5	U	5	U
Xylene (total)	6	U	5	U	5	U	5	U
N-butylbenzene	6	U	5	U	5	U	5	U

*= Outside of EPA CLP QC limits.

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

7915 8463 3221

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-006-63		Page 1 of 1	
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (17.5'-20')		SAF No. F03-006		Air Quality <input type="checkbox"/>			
Ice Chest No. ERC 96 056		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express			
Shipped To EBERLINE SERVICES (Formerly TMA) RELPA <i>4/22/03</i>		Offsite Property No. A030220		Bill of Lading/Air Bill No. SOE 0SPC					
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None
				Type of Container	aG	aG	aG	aG	aG
				No. of Container(s)	1	1	1	1	1
				Volume	120mL	60mL	120mL	60mL	60mL
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions <i>AG 4/22/03</i>	Tritium - H3	
Sample No.	Matrix *	Sample Date	Sample Time						
B16W80	SOIL	4/28/03	1560	X	X	X			
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix * S=Soil SE=Sediment SQ=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other	
Relinquished By/Removed From <i>Greg Thomas 4/28/03</i>		Date/Time <i>1645</i>		Received By/Stored In <i>REF 1A 3728 42803 1645</i>		Date/Time			
Relinquished By/Removed From <i>REF 1A 3728</i>		Date/Time <i>5103 1100</i>		Received By/Stored In <i>SJGALE 5103 1100</i>		Date/Time			
Relinquished By/Removed From <i>SJGALE 5103</i>		Date/Time <i>1100</i>		Received By/Stored In <i>FED EX</i>		Date/Time			
Relinquished By/Removed From <i>Joe E</i>		Date/Time <i>5-2-03 0945</i>		Received By/Stored In <i>5-2-03 0945</i>		Date/Time			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
LABORATORY SECTION				Received By				Title	
FINAL SAMPLE DISPOSITION				Disposal Method				Disposed By	
								Date/Time	

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-64		Page 1 of 1		
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (27.5'-30')		SAF No. F03-006		Air Quality <input type="checkbox"/>					
Ice Chest No. ERC 96056		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To BERLING SERVICES (Formerly TMA) RECRA		Offsite Property No. A030220		Bill of Lading/Air Bill No. SGE 057C							
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None		
				Type of Container	aG	aG	aG	aG	aG		
				No. of Container(s)	1	1	1	1	1		
				Volume	120mL	60mL	120mL	60mL	60mL		
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions	Tritium - H3			
Sample No.	Matrix *	Sample Date	Sample Time								
B16W81	SOIL	4/29/03	0745	X	X	X	/			B16W81 (W/SLF)	
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>** The laboratory is to achieve a detection limit of 30.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis.</p> <p>(1) Technetium-99, Strontium-89,90 - Total Sr, Isotopic Thorium (Thorium-232), Carbon-14, Iodine-129, Nickel-63, Neptunium-237</p> <p>Personnel not available to relinquish samples from the 3728 Ref #18 on 5/11/03</p>			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
LABORATORY SECTION		Received By		Title				Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time			

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-006-65		Page 1 of 1	
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (37.5'-40')				SAF No. F03-006		Air Quality <input type="checkbox"/>	
Ice Chest No. ERC 9.6 055		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express			
Shipped To REERA 1st EDERLINE SERVICES (Formerly TMA) 4/24/01		Offsite Property No. A030 220				Bill of Lading/Air Bill No. 5625 05PC			
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage		Preservation		Cool 4C	Cool 4C	Cool 4C	None	None	
		Type of Container		aG	aG	aG	aG	aG	
		No. of Container(s)		1	1	1	1	1	
		Volume		120mL	60mL	120mL	60mL	60mL	
SAMPLE ANALYSIS		Chromium Hex - 7196		NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions.	Tritium - H3		
Sample No.	Matrix *	Sample Date	Sample Time						
B16W82	SOIL	4/29/03	0900	X	X	X			B16W48 (WELF)
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>**The laboratory is to achieve a detection limit of 30.6 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis.</p> <p>(+) Technetium-99; Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; iodine-129; Nickel-63; Neptunium-237</p> <p>Personnel not available to relinquish samples from the 3728 Ref # 10 on 5.1.1.03</p>	
<i>[Signature]</i>		4/29/03 1400		<i>[Signature]</i>		4/29/03 1400			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
<i>[Signature]</i>		4/29/03 1400		<i>[Signature]</i>		4/29/03 1400			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
<i>[Signature]</i>		5/10/03 1100		<i>[Signature]</i>		5/10/03 1100			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>Matrix *</p> <p>S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other</p>	
<i>[Signature]</i>		5/10/03 1100		<i>[Signature]</i>		5/10/03 1100			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
<i>[Signature]</i>		5-2-03 0945		<i>[Signature]</i>		5-2-03 0945			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
<i>[Signature]</i>				<i>[Signature]</i>					
LABORATORY SECTION		Received By		Title				Date/Time	
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time	

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-66		Page 1 of 1				
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days			
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (47.5'-50')		SAF No. F03-006		Air Quality <input type="checkbox"/>							
Ice Chest No. ERC 96 056		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express							
Shipped To NEERA EBERLINE SERVICES (Formerly TMA) <i>for 4/14/03</i>		Offsite Property No. A030220				Bill of Lading/Air Bill No. SEE OSC							
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage		Preservation	Cool 4C	Cool 4C	Cool 4C	None	None						
		Type of Container	aG	aG	aG	aG	aG						
		No. of Container(s)	1	1	1	1	1						
		Volume	120mL	60mL	120mL	60mL	60mL						
SAMPLE ANALYSIS		Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions <i>see 4/12/03</i>	Tritium - H3							
Sample No.	Matrix *	Sample Date	Sample Time										
B16W83	SOIL	4/29/03	1020	X	X	X					B16W09 (LW5CF)		
CHAIN OF POSSESSION		Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *			
Relinquished By/Removed From <i>John Hansen</i>		Date/Time 4/29/03 1400		Received By/Stored In <i>R. F. Hulstrom</i>		Date/Time 4/29/03 1400		<p>** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis.</p> <p>(1) Technetium-99; Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237</p> <p><i>see 4/12/03</i></p> <p>Personnel not available to relinquish samples from the 3728 Ref # 1B on 5/11/03</p>				<p>S=Soil SE=Sediment SO=Solid SJ=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other</p>	
Relinquished By/Removed From <i>R. F. Hulstrom</i>		Date/Time 4/29/03		Received By/Stored In <i>IB</i>		Date/Time 4/29/03							
Relinquished By/Removed From <i>IB</i>		Date/Time 5/03 1100		Received By/Stored In <i>SJ GALE</i>		Date/Time 5/03 1100							
Relinquished By/Removed From <i>SJ GALE</i>		Date/Time 5/03 1100		Received By/Stored In <i>FED EX</i>		Date/Time							
Relinquished By/Removed From <i>Ref # 1B</i>		Date/Time 5-2-03 0945		Received By/Stored In <i>R. F. Hulstrom</i>		Date/Time 5-2-03 0945							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
LABORATORY SECTION		Received By		Title				Date/Time					
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time					

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-73		Page 1 of 1				
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days			
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (17.5'-20')				SAF No. F03-006		Air Quality <input type="checkbox"/>					
Ice Chest No. ERC 96 056		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express							
Shipped To REIRA EBERLINE SERVICES (Formerly TMA) 4/22/03		Offsite Property No. A030220				Bill of Lading/Air Bill No. 3RE 03PC							
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation		Cool 4C	Cool 4C	Cool 4C	None	None			
				Type of Container		aG	aG	aG	aG	aG			
				No. of Container(s)		1	1	1	1	1			
				Volume		120mL	60mL	120mL	60mL	60mL			
				SAMPLE ANALYSIS		Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions	Tritium - H3			
Sample No.		Matrix *		Sample Date		Sample Time							
B16W90		SOIL		4/28/03		1510							
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>** The laboratory is to achieve a detection limit of 30.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis.</p> <p>(1) Technetium-99, Strontium-89,90 - Total Sr, Isotopic Thorium (Thorium-232), Carbon-14, Iodine-129, Nickel-63, Neptunium-237 4/22/03</p> <p>Personnel not available to relinquish samples from the 3728 Ref # 1A on 5.1.103</p>					
Greg Johansen 4/28/03		1645		REF 1A 3728		42803 1645							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
REF 1A 3728		5.1.03 1100		JUGALC/ALR		5.1.03 1100							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
JUGALC/ALR		5.1.03 1100		FED EX									
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
Fred E.		5.2.03 0915		JUGALC/ALR		5.2.03 0915							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
LABORATORY SECTION		Received By		Title				Date/Time					
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time					

FH-Central Plateau Project						CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST								F03-006-74	Page 1 of 1		
Collector Johansen/Pope/Pfister						Company Contact LC Hulstrom				Telephone No. 373-3928				Project Coordinator TRENT, SJ		Price Code 8N	Data Turnaround 45 Days
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling						Sampling Location 216-A-37 (C4106); (0.5')				SAF No. F03-006				Air Quality <input type="checkbox"/>			
Ice Chest No. ERC 96 056						Field Logbook No. HNF-N-3361				COA 117504ES10				Method of Shipment Federal Express			
Shipped To M5103 RECREATION SERVICES (Formerly TMA)						Offsite Property No. A030 220				Bill of Lading/Air Bill No. SEE OSCP							
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage						Preservation	Cool 4C	Cool 4C									
						Type of Container	aG	aG									
						No. of Container(s)	1	1									
						Volume	60mL	250mL									
SAMPLE ANALYSIS						Pesticides - 8081	Chloro- Herbicides - EPA8151										
Sample No.	Matrix *	Sample Date	Sample Time														
B16W91	SOIL	4/28/03	130	X	X												
CHAIN OF POSSESSION								SPECIAL INSTRUCTIONS								Matrix * S=Soil SE=Sediment SO=Solid SL=Sludge W = Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other	
Relinquished By/Removed From Greg Thomas / Greg Thomas 4/28/03				Received By/Stored In REF 1A 3728 4/28/03 1645				Personnel not available to relinquish samples from the 3728 Ref # 1A on 5/11/03									
Relinquished By/Removed From REF 1A 3728 5103 1100				Received By/Stored In SDGALV/DOL 5/03 1100													
Relinquished By/Removed From SIGALV/M... 5103 1100				Received By/Stored In FED EX													
Relinquished By/Removed From [Signature] 5-2-03 0945				Received By/Stored In [Signature] 5-2-03 0945													
Relinquished By/Removed From				Received By/Stored In													
LABORATORY SECTION Received By				Title				Date/Time									
FINAL SAMPLE DISPOSITION Disposal Method				Disposed By				Date/Time									

LIONVILLE LABORATORY INCORPORATED

SAMPLE RECEIPT CHECKLIST

CLIENT: TNU Hamford

Purchase Order/Project:

DATE: 5-2-03

AF# / SOW# / Release #: F03-006

Laboratory SDG #:

0305L329

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

- | | | | | |
|--|---|-----------------------------|---|--|
| 1. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 2. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 3. Airbill # recorded? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 5. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 7. All samples on coc received? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 8. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 10. Shipment meets Lvl1 Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 11. Where applicable, bar code labels are affixed to coc? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 12. coc signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 13. coc will be faxed or emailed to client? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 14. Project Manager/Client contacted concerning discrepancies? (name/date) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |

Cooler # / temp (°C) and Comments:

ELC 96-056 / 1.3°C

Laboratory Sample Custodian:

Laboratory Project Manager:

[Signature]

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Lionville Laboratory, Inc.
BNA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2194

DATE RECEIVED: 05/02/03

LVL LOT # :0305L329

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B16W79	001	S	03LE0575	04/28/03	05/14/03	06/07/03
B16W80	002	S	03LE0575	04/28/03	05/14/03	06/07/03
B16W80	002 MS	S	03LE0575	04/28/03	05/14/03	06/07/03
B16W80	002 MSD	S	03LE0575	04/28/03	05/14/03	06/07/03
B16W81	003	S	03LE0575	04/29/03	05/14/03	06/07/03
B16W82	004	S	03LE0575	04/29/03	05/14/03	06/07/03
B16W83	005	S	03LE0575	04/29/03	05/14/03	06/08/03
B16W90	006	S	03LE0575	04/28/03	05/14/03	06/08/03

LAB QC:

SBLKTK	MB1	S	03LE0575	N/A	05/14/03	06/07/03
SBLKTK	MB1 BS	S	03LE0575	N/A	05/14/03	06/07/03





Client: TNU-HANFORD F03-006
LVL #: 0305L329
SDG/SAF # H2194/F03-006

W.O. #: 11343-606-001-9999-00
Date Received: 05-02-2003


SEMIVOLATILE

Six (6) soil samples were collected on 04-28,29-2003.

The samples and their associated QC samples were extracted according to Lionville Laboratory OPs based on method 3550 on 05-14-2003 and analyzed according to criteria set forth in Lionville Laboratory OPs based on SW 846 Method 8270C for client specified Semivolatile target compounds on 06-07,08-2003.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from samples that met LVL's sample acceptance policy.
2. Samples were extracted outside of holding time as per client instructions because the analysis has been added later; however, samples were analyzed within required holding time.
3. Non-target compounds were detected in the samples.
4. All surrogate recoveries were within EPA QC limits.
5. All matrix spike recoveries were within EPA QC limits.
6. All blank spike recoveries were within EPA QC limits.
7. Internal standard area and retention time criteria were met.
8. Manual integrations are performed according to OP 21-06A-125 to produce quality data with the utmost integrity. All manual integrations are required to be technically valid and properly documented. Appropriate technical flags are defined in the Glossary ("Technical Flags For Manual Integration").
9. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.


J. Michael Taylor
President
Lionville Laboratory Incorporated

6/17/03
Date

son\group\data\bnal\tnu-hanford-0305-329.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 27 pages.

GLOSSARY

DATA QUALIFIERS

- U = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.
- J = Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- D = Identifies all compounds identified in an analysis at a secondary dilution factor.
- I = Interference.
- NQ = Result qualitatively confirmed but not able to quantify.
- A = Indicates that a TIC is a suspected aldol-condensation product.
- N = Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.
- X = This flag is used for a TIC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closest internal standard).
- Y = Additional qualifiers used as required are explained in the case narrative.

GLOSSARY

ABBREVIATIONS

BS	=	Indicates blank spike in which reagent grade water is spiked with the CLP matrix spike solutions and carried through all the steps in the method. Spike recoveries are reported.
BSD	=	Indicates blank spike duplicate.
MS	=	Indicates matrix spike.
MSD	=	Indicates matrix spike duplicate.
DL	=	Suffix added to sample number to indicate that results are from a diluted analysis.
NA	=	Not Applicable.
DF	=	Dilution Factor.
NR	=	Not Required.
SP, Z	=	Indicates Spiked Compound.

TECHNICAL FLAGS FOR MANUAL INTEGRATION

Manual quan modifications or integrations are performed routinely to improve the data quality for a variety of technical reasons. Documentation of these modifications should be clear and concise. The following "flags" are used to indicate the technical reasons for quan modifications:

- MP - Missed Peak: manually added peak not found by automatic quan program.
- PA - Peak Assignment: quan report was changed to reflect correct peak assignment.
- RI - Routine Integration: routine integrations are performed for some analytes that are consistently integrated improperly by the automatic integration programs. Examples are the dichlorobenzene isomers on the VOA packed column and benzo(b)fluoranthene/benzo(k)fluoranthene which are poorly resolved on the BNA column.
- SP - Split Peak: the automatic integration improperly split the peak; a manual integration was performed to get the correct area.
- CB - Coelution/Background: peak was manually integrated to eliminate contribution from coeluting compounds, background signal, or other interference.
- PI - Proper Integration: a peak with poor or inconsistent integration (e.g., excessive tail) was properly integrated manually.

Lionville Laboratory, Inc.

Semivolatiles by GC/MS, Special List

Report Date: 06/12/03 11:13

RFW Batch Number: 0305L329

Client: TNUHANFORD F03-006 H2194

Work Order: 11343606001

Page: 1a

Cust ID:		B16W79	B16W80	B16W80	B16W80	B16W81	B16W82
Sample RFW#:		001	002	002 MS	002 MSD	003	004
Information Matrix:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
D.F.:		1.00	1.00	1.00	1.00	1.00	1.00
Units:		UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate Recovery	Nitrobenzene-d5	67 %	75 %	73 %	73 %	78 %	71 %
	2-Fluorobiphenyl	64 %	72 %	70 %	71 %	72 %	71 %
	Terphenyl-d14	82 %	94 %	87 %	88 %	98 %	93 %
	Phenol-d5	68 %	76 %	73 %	74 %	78 %	74 %
	2-Fluorophenol	59 %	67 %	66 %	67 %	67 %	63 %
	2,4,6-Tribromophenol	63 %	69 %	72 %	70 %	60 %	67 %
=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====							
	Phenol	360 U	350 U	67 %	71 %	350 U	350 U
	bis(2-Chloroethyl) ether	360 U	350 U	350 U	350 U	350 U	350 U
	2-Chlorophenol	360 U	350 U	63 %	65 %	350 U	350 U
	1,3-Dichlorobenzene	360 U	350 U	350 U	350 U	350 U	350 U
	1,4-Dichlorobenzene	360 U	350 U	66 %	66 %	350 U	350 U
	1,2-Dichlorobenzene	360 U	350 U	350 U	350 U	350 U	350 U
	2-Methylphenol	360 U	350 U	350 U	350 U	350 U	350 U
	2,2'-oxybis(1-Chloropropane)	360 U	350 U	350 U	350 U	350 U	350 U
	3- and/or 4-Methylphenol	360 U	350 U	350 U	350 U	350 U	350 U
	N-Nitroso-di-n-propylamine	360 U	350 U	67 %	67 %	350 U	350 U
	Hexachloroethane	360 U	350 U	350 U	350 U	350 U	350 U
	Nitrobenzene	360 U	350 U	350 U	350 U	350 U	350 U
	Isophorone	360 U	350 U	350 U	350 U	350 U	350 U
	2-Nitrophenol	360 U	350 U	350 U	350 U	350 U	350 U
	2,4-Dimethylphenol	360 U	350 U	350 U	350 U	350 U	350 U
	bis(2-Chloroethoxy) methane	360 U	350 U	350 U	350 U	350 U	350 U
	2,4-Dichlorophenol	360 U	350 U	350 U	350 U	350 U	350 U
	1,2,4-Trichlorobenzene	360 U	350 U	67 %	66 %	350 U	350 U
	Naphthalene	360 U	350 U	350 U	350 U	350 U	350 U
	4-Chloroaniline	360 U	350 U	350 U	350 U	350 U	350 U
	Hexachlorobutadiene	360 U	350 U	350 U	350 U	350 U	350 U
	4-Chloro-3-methylphenol	360 U	350 U	67 %	67 %	350 U	350 U
	2-Methylnaphthalene	360 U	350 U	350 U	350 U	350 U	350 U
	Hexachlorocyclopentadiene	360 U	350 U	350 U	350 U	350 U	350 U
	2,4,6-Trichlorophenol	360 U	350 U	350 U	350 U	350 U	350 U
	2,4,5-Trichlorophenol	890 U	870 U	870 U	870 U	870 U	880 U

* = Outside of EPA CLP QC limits.

Cust ID:	B16W79	B16W80	B16W80	B16W80	B16W81	B16W82
RFW#:	001	002	002 MS	002 MSD	003	004
2-Chloronaphthalene	360 U	350 U	350 U	350 U	350 U	350 U
2-Nitroaniline	890 U	870 U	870 U	870 U	870 U	880 U
Dimethylphthalate	360 U	350 U	350 U	350 U	350 U	350 U
Acenaphthylene	360 U	350 U	350 U	350 U	350 U	350 U
2,6-Dinitrotoluene	360 U	350 U	350 U	350 U	350 U	350 U
3-Nitroaniline	890 U	870 U	870 U	870 U	870 U	880 U
Acenaphthene	360 U	350 U	67 %	67 %	350 U	350 U
2,4-Dinitrophenol	890 U	870 U	870 U	870 U	870 U	880 U
4-Nitrophenol	890 U	870 U	70 %	61 %	870 U	880 U
Dibenzofuran	360 U	350 U	350 U	350 U	350 U	350 U
2,4-Dinitrotoluene	360 U	350 U	80 %	81 %	350 U	350 U
Diethylphthalate	360 U	350 U	350 U	350 U	350 U	350 U
4-Chlorophenyl-phenylether	360 U	350 U	350 U	350 U	350 U	350 U
Fluorene	360 U	350 U	350 U	350 U	350 U	350 U
4-Nitroaniline	890 U	870 U	870 U	870 U	870 U	880 U
4,6-Dinitro-2-methylphenol	890 U	870 U	870 U	870 U	870 U	880 U
N-Nitrosodiphenylamine (1)	360 U	350 U	350 U	350 U	350 U	350 U
4-Bromophenyl-phenylether	360 U	350 U	350 U	350 U	350 U	350 U
Hexachlorobenzene	360 U	350 U	350 U	350 U	350 U	350 U
Pentachlorophenol	890 U	870 U	67 %	62 %	870 U	880 U
Phenanthrene	360 U	350 U	350 U	350 U	350 U	350 U
Anthracene	360 U	350 U	350 U	350 U	350 U	350 U
Carbazole	360 U	350 U	350 U	350 U	350 U	350 U
Di-n-butylphthalate	360 U	350 U	350 U	350 U	350 U	350 U
Fluoranthene	360 U	350 U	350 U	350 U	350 U	350 U
Pyrene	360 U	350 U	78 %	80 %	350 U	350 U
Butylbenzylphthalate	360 U	350 U	350 U	350 U	350 U	350 U
3,3'-Dichlorobenzidine	360 U	350 U	350 U	350 U	350 U	350 U
Benzo (a) anthracene	360 U	350 U	350 U	350 U	350 U	350 U
Chrysene	360 U	350 U	350 U	350 U	350 U	350 U
bis (2-Ethylhexyl) phthalate	21 J	350 U	21 J	350 U	350 U	350 U
Di-n-octyl phthalate	360 U	350 U	350 U	350 U	350 U	350 U
Benzo (b) fluoranthene	360 U	350 U	350 U	350 U	350 U	350 U
Benzo (k) fluoranthene	360 U	350 U	350 U	350 U	350 U	350 U
Benzo (a) pyrene	360 U	350 U	350 U	350 U	350 U	350 U
Indeno (1,2,3-cd) pyrene	360 U	350 U	350 U	350 U	350 U	350 U
Dibenz (a, h) anthracene	360 U	350 U	350 U	350 U	350 U	350 U
Benzo (g, h, i) perylene	360 U	350 U	350 U	350 U	350 U	350 U
2-Butoxyethanol	360 U	350 U	350 U	350 U	350 U	350 U
Benzyl alcohol	360 U	350 U	350 U	350 U	350 U	350 U

*= Outside of EPA CLP QC limits.

RFW Batch Number: 0305L329 Client: TNUHANFORD F03-006 H2194 Work Order: 11343606001 Page: 1c

Cust ID: B16W79 B16W80 B16W80 B16W80 B16W81 B16W82

RFW#: 001 002 002 MS 002 MSD 003 004

Tributylphosphate 45 J 350 U 350 U 350 U 350 U 350 U

(1) - Cannot be separated from Diphenylamine. *= Outside of EPA CLP QC limits.

RFW Batch Number: 0305L329

Client: TNUHLANFORD F03-006 H2194

Work Order: 11343606001

Page: 2a

[illegible]

*= Outside of EPA CLP OC limits.

Cust ID:

B16W83

B16W90

SBLKTK

SBLKTK BS

RFW#:

005

006

03LE0575-MB1

03LE0575-MB1

2-Chloronaphthalene	350 U	350 U	330 U	330 U
2-Nitroaniline	880 U	870 U	830 U	830 U
Dimethylphthalate	350 U	350 U	330 U	330 U
Acenaphthylene	350 U	350 U	330 U	330 U
2,6-Dinitrotoluene	350 U	350 U	330 U	330 U
3-Nitroaniline	880 U	870 U	830 U	830 U
Acenaphthene	350 U	350 U	330 U	68 %
2,4-Dinitrophenol	880 U	870 U	830 U	830 U
4-Nitrophenol	880 U	870 U	830 U	79 %
Dibenzofuran	350 U	350 U	330 U	330 U
2,4-Dinitrotoluene	350 U	350 U	330 U	83 %
Diethylphthalate	350 U	350 U	330 U	330 U
4-Chlorophenyl-phenylether	350 U	350 U	330 U	330 U
Fluorene	350 U	350 U	330 U	330 U
4-Nitroaniline	880 U	870 U	830 U	830 U
4,6-Dinitro-2-methylphenol	880 U	870 U	830 U	830 U
N-Nitrosodiphenylamine (1)	350 U	350 U	330 U	330 U
4-Bromophenyl-phenylether	350 U	350 U	330 U	330 U
Hexachlorobenzene	350 U	350 U	330 U	330 U
Pentachlorophenol	880 U	870 U	830 U	82 %
Phenanthrene	350 U	350 U	330 U	330 U
Anthracene	350 U	350 U	330 U	330 U
Carbazole	350 U	350 U	330 U	330 U
Di-n-butylphthalate	350 U	350 U	330 U	330 U
Fluoranthene	350 U	350 U	330 U	330 U
Pyrene	350 U	350 U	330 U	81 %
Butylbenzylphthalate	350 U	350 U	330 U	330 U
3,3'-Dichlorobenzidine	350 U	350 U	330 U	330 U
Benzo(a)anthracene	350 U	350 U	330 U	330 U
Chrysene	350 U	350 U	330 U	330 U
bis(2-Ethylhexyl)phthalate	350 U	350 U	330 U	51 J
Di-n-octyl phthalate	350 U	350 U	330 U	330 U
Benzo(b)fluoranthene	350 U	350 U	330 U	330 U
Benzo(k)fluoranthene	350 U	350 U	330 U	330 U
Benzo(a)pyrene	350 U	350 U	330 U	330 U
Indeno(1,2,3-cd)pyrene	350 U	350 U	330 U	330 U
Dibenz(a,h)anthracene	350 U	350 U	330 U	330 U
Benzo(g,h,i)perylene	350 U	350 U	330 U	330 U
2-Butoxyethanol	350 U	350 U	330 U	330 U
Benzyl alcohol	350 U	350 U	330 U	330 U

*= Outside of EPA CLP QC limits.

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RFW Batch Number: 0305L329 Client: TNOHANFORD F03-006 H2194 Work Order: 11343606001 Page: 2c

Cust ID: B16W83 B16W90 SBLKTK SBLKTK BS

RFW#: 005 006 03LE0575-MB1 03LE0575-MB1

Tributylphosphate 350 U 350 U 330 U 330 U

(1) - Cannot be separated from Diphenylamine. *= Outside of EPA CLP QC limits.

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B16W79

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD F03-006 H2194

Matrix: (soil/water) SOIL

Lab Sample ID: 0305L329-001

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: D060720

Level: (low/med) LOW

Date Received: 05/02/03

% Moisture: 6 decanted: (Y/N)

Date Extracted: 05/14/03

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 06/07/03

Injection Volume: 2.0 (uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

Number TICs found: 3

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	3.550	200	JAB
2.	ALDOL CONDENSATE	4.124	20000	JAB
3.	UNKNOWN	20.626	100	J

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B16W80

Lab Name: Lionville Labs, Inc. Work Order: 11343606001Client: TNUHANFORD F03-006 H2194Matrix: (soil/water) SOILLab Sample ID: 0305L329-002Sample wt/vol: 30.0 (g/mL) GLab File ID: D060721Level: (low/med) LOWDate Received: 05/02/03% Moisture: 4 decanted: (Y/N) Date Extracted: 05/14/03Concentrated Extract Volume: 1000 (uL)Date Analyzed: 06/07/03Injection Volume: 2.0 (uL)Dilution Factor: 1.00GPC Cleanup: (Y/N) NpH: 7.0

CONCENTRATION UNITS:

Number TICs found: 2(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	3.539	200	JAB
2.	ALDOL CONDENSATE	4.122	20000	JAB

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B16W81

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD F03-006 H2194

Matrix: (soil/water) SOIL

Lab Sample ID: 0305L329-003

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: D060724

Level: (low/med) LOW

Date Received: 05/02/03

% Moisture: 4 decanted: (Y/N)

Date Extracted: 05/14/03

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 06/07/03

Injection Volume: 2.0 (uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

CONCENTRATION UNITS:

Number TICs found: 3

(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	3.178	100	J
2.	ALDOL CONDENSATE	3.543	100	JAB
3.	ALDOL CONDENSATE	4.143	30000	JAB

14

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

B16W82

Client: TNUHANFORD F03-006 H2194

Matrix: (soil/water) SOIL

Lab Sample ID: 0305L329-004

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: D060725

Level: (low/med) LOW

Date Received: 05/02/03

% Moisture: 6 decanted: (Y/N)

Date Extracted: 05/14/03

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 06/07/03

Injection Volume: 2.0 (uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

CONCENTRATION UNITS:

Number TICs found: 3

(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	3.182	100	J
2.	ALDOL CONDENSATE	3.556	200	JAB
3.	ALDOL CONDENSATE	4.130	30000	JAB

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B16W83

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD F03-006 H2194

Matrix: (soil/water) SOIL

Lab Sample ID: 0305L329-005

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: D060804

Level: (low/med) LOW

Date Received: 05/02/03

% Moisture: 5 decanted: (Y/N)

Date Extracted: 05/14/03

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 06/08/03

Injection Volume: 2.0 (uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

CONCENTRATION UNITS:

Number TICs found: 3

(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
=====	=====	=====	=====	=====
1.	UNKNOWN	3.175	300	J
2.	ALDOL CONDENSATE	3.549	200	JAB
3.	ALDOL CONDENSATE	4.123	20000	JAB

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B16W90

Lab Name: Lionville Labs, Inc. Work Order: 11343606001Client: TNUHANFORD F03-006 H2194Matrix: (soil/water) SOILLab Sample ID: 0305L329-006Sample wt/vol: 30.0 (g/mL) GLab File ID: D060805Level: (low/med) LOWDate Received: 05/02/03% Moisture: 4 decanted: (Y/N) Date Extracted: 05/14/03Concentrated Extract Volume: 1000 (uL)Date Analyzed: 06/08/03Injection Volume: 2.0 (uL)Dilution Factor: 1.00GPC Cleanup: (Y/N) NpH: 7.0

CONCENTRATION UNITS:

Number TICs found: 3(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	3.177	200	J
2.	ALDOL CONDENSATE	3.551	300	JAB
3.	ALDOL CONDENSATE	4.160	30000	JAB

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLKTK

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD F03-006 H2194

Matrix: (soil/water) SOIL

Lab Sample ID: 03LE0575-MB1

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: D060718

Level: (low/med) LOW

Date Received: 05/14/03

% Moisture: _____ decanted: (Y/N) _____

Date Extracted: 05/14/03

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 06/07/03

Injection Volume: 2.0 (uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

CONCENTRATION UNITS:

Number TICs found: 3

(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	3.543	200	JA
2.	ALDOL CONDENSATE	4.125	20000	JA
3.	UNKNOWN	21.471	80	J

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS[illegible]

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-62		Page 1 of 1		
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (12.5'-15')		SAF No. F03-006		Air Quality <input type="checkbox"/>					
Ice Chest No. ERC 96 05F		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To RECRA EDERLINE SERVICES (Formerly TMA) 4/22/03		Offsite Property No. A030 220		Bill of Lading/Air Bill No. SEE OSPL							
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None		
				Type of Container	aG	aG	aG	aG	aG		
				No. of Container(s)	1	1	1	1	1		
				Volume	120mL	60mL	120mL	60mL	60mL		
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions.	Tritium - H3			
Sample No.	Matrix *	Sample Date	Sample Time								
B16W79	SOIL	4/28/03	1350	X	X	X					
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS 4/22/03			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>4/22/03</p> <p>The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis.</p> <p>(1) Technetium-99, Strontium-89,90 - Total Sr, Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237</p> <p>4/22/03</p> <p>Personnel not available to relinquish samples from the 3728 Ref # 1A on 5.1.1.103</p>			
Greg Thompson		4/20/03		REF 1A 3728		42803 1645					
REF 1A 3728		5.1.03 1100		S. J. GALE		5.1.03 1100					
S. J. GALE		5.1.03 1100		FED EX							
4/20/03		5.2.03 0945		5.2.03 0945							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
LABORATORY SECTION		Received By		Title				Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time			

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-63		Page 1 of 1		
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (17.5'-20')		SAF No. F03-006		Air Quality <input type="checkbox"/>					
Ice Chest No. ERC 96 056		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To EBERLINE SERVICES (Formerly TMA) RELRA <i>4/22/03</i>		Offsite Property No. A030220		Bill of Lading/Air Bill No. SOE 03PC							
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None		
				Type of Container	aG	aG	aG	aG	aG		
				No. of Container(s)	1	1	1	1	1		
				Volume	120mL	60mL	120mL	60mL	60mL		
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions <i>AGM 4/22/03</i>	Tritium - H3			
Sample No.	Matrix *	Sample Date	Sample Time								
B16W80	SOIL	4/28/03	1500	X	X	X					
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p><i>182 4/22/03</i></p> <p>** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis.</p> <p><i>41 Technetium-99, Strontium-89,90 - Total Sr, Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237</i></p> <p><i>982 4/22/03</i></p> <p>Personnel not available to relinquish samples from the 3728 Ref # <u>1A</u> on <u>51103</u></p>			
<i>Greg Thomas</i>		<i>4/28/03</i>		<i>REF 1A 3728</i>		<i>42803 1645</i>					
<i>RELRA</i>		<i>5103 1100</i>		<i>SDGALE</i>		<i>5103 1100</i>					
<i>SJGALE</i>		<i>5103 1100</i>		<i>FED EX</i>							
<i>980 En</i>		<i>5-2-03 0945</i>		<i>SA/Phin</i>		<i>5-2-03 0945</i>					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>Matrix *</p> <p>S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Dryn Solids DL=Dryn Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other</p>			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
LABORATORY SECTION		Received By		Title				Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time			

FH-Central Plateau Project			CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						F03-006-64		Page 1 of 1	
Collector Johansen/Pope/Pfister			Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling			Sampling Location 216-A-37 (C4106); (27.5'-30')		SAF No. F03-006				Air Quality <input type="checkbox"/>			
Ice Chest No. ERC 96 056			Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To ECRA BERLINE SERVICES (Formerly TMA) <i>4/22/03</i>			Offsite Property No. A030220				Bill of Lading/Air Bill No. 30E 057C					
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage			Preservation	Cool 4C	Cool 4C	Cool 4C	None	None				
			Type of Container	aG	aG	aG	aG	aG				
			No. of Container(s)	1	1	1	1	1				
			Volume	120mL	60mL	120mL	60mL	60mL				
SAMPLE ANALYSIS			Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions.	Tritium - H3					
						<i>18K 4/22/03</i>						
Sample No.	Matrix *	Sample Date	Sample Time									
B16W81	SOIL	4/29/03	0745	X	X	X						B16W81 (UNCLF)
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p><i>18K 4/22/03</i></p> <p>** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis.</p> <p>(1) Technetium-99, Strontium-89,90 - Total Sr; Isotopic Fluorine (Fluorine-252); Carbon-14; Iodine-129; Nickel-63; Neptunium-237.</p> <p><i>18K 4/22/03</i></p> <p>Personnel not available to relinquish samples from the 3728 Ref #18 on 5/1/03</p>				S=Soil SE=Sediment SG=Solid SL=Sludge W=Water O=Oil A=Air DS=Dry Solid DL=Dry Liquid T=Tissue WJ=Wipe L=Liquid V=Vegetation X=Other
<i>18K 4/22/03</i>		<i>4/29/03 1400</i>		<i>ERC 4/29/03 1400</i>		<i>4/29/03 1400</i>						
<i>18K 4/22/03</i>		<i>4/29/03 1400</i>		<i>IB 3728 4/29/03</i>		<i>4/29/03 1400</i>						
<i>18K 4/22/03</i>		<i>5/1/03 1100</i>		<i>SJGALC 5/1/03 1100</i>		<i>5/1/03 1100</i>						
<i>18K 4/22/03</i>		<i>5/1/03 1100</i>		<i>FED EX</i>		<i>5/1/03 1100</i>						
<i>18K 4/22/03</i>		<i>5/2/03 0945</i>		<i>2/1/03 5/2/03 0945</i>		<i>5/2/03 0945</i>						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
LABORATORY SECTION		Received By		Title				Date/Time				
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time				

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-65		Page 1 of 1		
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (37.5'-40')		SAF No. F03-006		Air Quality <input type="checkbox"/>					
Ice Chest No. ERC 9.6 055		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To RECRA 1st 4/22/03 EDERLINE SERVICES (Formerly TMA)		Offsite Property No. A030220		Bill of Lading/Air Bill No. 5825 05PC							
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None		
				Type of Container	aG	aG	aG	aG	aG		
				No. of Container(s)	1	1	1	1	1		
				Volume	120mL	60mL	120mL	60mL	60mL		
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions	Tridium - H3			
									TIT TO:		
Sample No.	Matrix *	Sample Date	Sample Time								
B16W82	SOIL	4/29/03	0900	X	X	X					B16W48 (W5CF)
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>**The laboratory is to achieve a detection limit of 30.0 ppb for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis.</p> <p>(4) Technetium-99; Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237</p> <p>Personnel not available to relinquish samples from the 3728 Ref # 10 on 5.1.1.03</p>			
XXXXXXXXXXXXXXXXXXXX		4/29/03 1400		R. F. Lee		4/29/03 1400					
R. F. Lee		4/29/03 1400		1 B		3728 4.29.03					
1 B 3728		5.1.03 1100		SIGALED		5.1.03 1100					
5.1.03 1100		5.1.03 1100		5.1.03 1100		5.1.03 1100					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>Matrix *</p> <p>S=Soil SE=Soil SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other</p>			
5.1.03 1100		5.1.03 1100		5.1.03 1100		5.1.03 1100					
5.1.03 1100		5.1.03 1100		5.1.03 1100		5.1.03 1100					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
5.1.03 1100		5.1.03 1100		5.1.03 1100		5.1.03 1100					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
5.1.03 1100		5.1.03 1100		5.1.03 1100		5.1.03 1100					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
5.1.03 1100		5.1.03 1100		5.1.03 1100		5.1.03 1100					
LABORATORY SECTION		Received By		Title				Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time			

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						F03-006-66	Page 1 of 1	
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N	Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (47.5'-50')				SAF No. F03-006		Air Quality <input type="checkbox"/>		
Ice Chest No. ERC 96 056		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express				
Shipped To EBERLINE SERVICES (Formerly TMA)		Offsite Property No. A030220				Bill of Lading/Air Bill No. SEE OSPC				
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage		Preservation	Cool 4C	Cool 4C	Cool 4C	None	None			
		Type of Container	aG	aG	aG	aG	aG			
		No. of Container(s)	1	1	1	1	1			
		Volume	120mL	60mL	120mL	60mL	60mL			
SAMPLE ANALYSIS			Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions	Tritium - H3			
Sample No.	Matrix *	Sample Date	Sample Time							
B16W83	SOIL	4/29/03	1020	X	X	X			B16W83 (W5CF)	
CHAIN OF POSSESSION		Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *
Relinquished By/Removed From M. Hansen 4/29/03 1100		Received By/Stored In R. Feltz 4/29/03 1100		** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis.						S=Soil SE=Sediment SO=Solid SL=Sludge W = Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From R. Feltz 4/29/03		Received By/Stored In IB 3728 4/29/03		(1)-Technetium-99; Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237						
Relinquished By/Removed From IB 3728 S103 1100		Received By/Stored In SJGALE 5/103 1100		Personnel not available to relinquish samples from the 3728 Ref # 1B on 5/11/03						
Relinquished By/Removed From SJGALE 5/103 1100		Received By/Stored In FED EX								
Relinquished By/Removed From FED EX 5/2/03 0945		Received By/Stored In Smith 5/2/03 0945								
Relinquished By/Removed From		Received By/Stored In								
LABORATORY SECTION	Received By	Title				Date/Time				
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By				Date/Time				

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-73		Page 1 of 1		
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (17.5'-20')				SAF No. F03-006		Air Quality <input type="checkbox"/>			
Ice Chest No. ERC 96 056		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To REIRA EDERLINE SERVICES (Formerly TMA) 4/22/03		Offsite Property No. A030220				Bill of Lading/Air Bill No. 308 03 PC					
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None		
				Type of Container	aG	aG	aG	aG	aG		
				No. of Container(s)	1	1	1	1	1		
				Volume	120mL	60mL	120mL	60mL	60mL		
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions ASAC 4/22/03	Tritium - H3			
Sample No.	Matrix *	Sample Date	Sample Time								
B16W90	SOIL	4/28/03	1510	X	X	X					
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS			
Relinquished By/Removed From <i>Greg Johnson</i>		Date/Time <i>1645 4/28/03</i>		Received By/Stored In <i>REF 1A 3728</i>		Date/Time <i>42803 1645</i>		<p>ASAC 4/22/03</p> <p>The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis.</p> <p>(1) Technetium-99, Strontium-89,90 - Total Sr, Isotopic Thorium (Thorium-232), Carbon-14, Iodine-129, Nickel-63, Neptunium-237 ASAC 4/22/03</p> <p>Personnel not available to relinquish samples from the 3728 Ref # 1A on 511103</p>			
Relinquished By/Removed From <i>Greg Johnson</i>		Date/Time <i>5103 1100</i>		Received By/Stored In <i>SJGALC/DALH</i>		Date/Time <i>5103 1100</i>					
Relinquished By/Removed From <i>SJGALC/DALH</i>		Date/Time <i>5103 1100</i>		Received By/Stored In <i>FED EX</i>		Date/Time <i>5103 1100</i>					
Relinquished By/Removed From <i>Med Ex</i>		Date/Time <i>5-2-03 0945</i>		Received By/Stored In <i>Med Ex</i>		Date/Time <i>5-2-03 0945</i>					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		Matrix * S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
LABORATORY SECTION		Received By				Title				Date/Time	
FINAL SAMPLE DISPOSITION		Disposal Method				Disposed By				Date/Time	

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-006-74	
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (0.5')		SAF No. F03-006		Price Code 8N Data Turnaround 45 Days	
Ice Chest No. ERC 96 056		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express	
Shipped To EDERLINE SERVICES (Formerly TMA)		Offsite Property No. A030220		Bill of Lading/Air Bill No. SEE 05PC			
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	
				Type of Container	aG	aG	
				No. of Container(s)	1	1	
				Volume	60mL	250mL	
SAMPLE ANALYSIS				Pesticides - 8081	Chloro- Herbicides - EPA8151		
Sample No.	Matrix *	Sample Date	Sample Time				
B16W91	SOIL	4/28/03	130	X	X		
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time	
<i>Greg Thomas</i>		4/28/03		REF 1A 3728		4/28/03 1645	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time	
REF 1A 3728		5103 1100		SD GALEY		5/1/03 1100	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time	
SD GALEY		5/1/03 1100		FED EX			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time	
Jed E		5-2-03 0945		Jed E		5-2-03 0945	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time	
LABORATORY SECTION				Received By _____ Title _____ Date/Time _____			
FINAL SAMPLE DISPOSITION				Disposal Method _____ Disposed By _____ Date/Time _____			

Matrix *
 S=Soil
 SE=Sediment
 SO=Solid
 SL=Sludge
 W=Water
 O=Oil
 A=Air
 DS=Dry Solids
 DL=Dry Liquids
 T=Tissue
 WT=Wipe
 L=Liquid
 V=Vegetation
 X=Other

Personnel not available to
 relinquish samples from the 3728
 Ref # 1A on 5/1/03

LIONVILLE LABORATORY INCORPORATED SAMPLE RECEIPT CHECKLIST

CLIENT: TNU Hamford

Order/Project:

DATE: 5-2-03

F# / SOW# / Release #: F03-006

Laboratory SDG #:

0305L329

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

- | | | | | |
|--|---|-----------------------------|---|--|
| 1. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 2. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 3. Airbill # recorded? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 5. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 7. All samples on coc received? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 8. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 10. Shipment meets LVL Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 11. Where applicable, bar code labels are affixed to coc? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 12. coc signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 13. coc will be faxed or emailed to client? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 14. Project Manager/Client contacted concerning discrepancies? (name/date) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |

Cooler # / temp (°C) and Comments:

EEC 96-056 / 1.3°

Laboratory Sample Custodian:

[Signature]

Laboratory Project Manager:

27

Lionville Laboratory, Inc.
HBGX ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD F03-006 #2194

DATE RECEIVED: 05/02/03

LVL LOT # :0305L329

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B16W91	007	S	03LE0531	04/28/03	05/05/03	05/07/03
B16W91	007 MS	S	03LE0531	04/28/03	05/05/03	05/07/03
B16W91	007 MSD	S	03LE0531	04/28/03	05/05/03	05/07/03

LAB QC:

PBLKSR	MB1	S	03LE0531	N/A	05/05/03	05/07/03
PBLKSR	MB1 BS	S	03LE0531	N/A	05/05/03	05/07/03
PBLKSR	MB1 BSD	S	03LE0531	N/A	05/05/03	05/07/03



for tests



Analytical Report

Client: TNU HANFORD F03-006
LVL#: 0305L329
SDG/SAF#: H2194/F03-006

W.O.#: 11343-606-001-9999-00
Date Received: 05-02-03

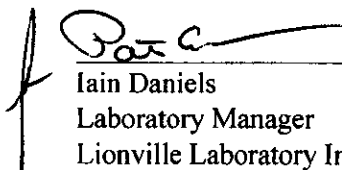
HERBICIDE

One (1) soil sample was collected on 04-28-03.

The sample and its associated QC samples were extracted on 05-05-03 and analyzed according to Lionville Laboratory OPs based on SW846, 3rd Edition procedures on 05-07-03. The extraction and analysis procedure was based on method 8151A.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from samples that met LVLI's sample acceptance policy.
2. All required holding times for extraction and analysis have been met.
3. The method blank was below the reporting limits for all target compounds.
4. All surrogate recoveries were within acceptance criteria.
5. All blank spike recoveries were within acceptance criteria.
6. Four (4) of sixteen (16) matrix spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
7. All initial calibrations associated with this data set were within acceptance criteria.
8. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
9. To the best of my knowledge, this data report is in compliance with the terms and conditions of the purchase order, both technically and for completeness, for other than the conditions detailed in the case narrative. Release of the data contained in this hard copy data package and in the electronic data submitted on diskette has been authorized by the cognizant laboratory manager or his/her designee to be accurate as verified by the following signature.


Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

05-16-03
Date

pef\7somr:\group\data\herb\tnu\04L-329.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 15 pages.

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 036C130

Initiator: John Leach
Date: 5/15/03
Client: TNU

Batch: 0305L329
Samples: MSD
Method: SW846/MCAWW/CLP/

Parameter: Herb
Matrix: Soil
Prep Batch: 03LE0531

1. Reason for SDR

a. COC Discrepancy ☐ Tech Profile Error ☐ Client Request ☐ Sampler Error on C-O-C
☐ Transcription Error ☐ Wrong Test Code ☐ Other

b. General Discrepancy

☐ Missing Sample/Extract ☐ Container Broken ☐ Wrong Sample Pulled ☐ Label ID's Illegible
☐ Hold Time Exceeded ☐ Insufficient Sample ☐ Preservation Wrong ☐ Received Past Hold
☐ Improper Bottle Type ☐ Not Amenable to Analysis

Note*: Verified by [Log-In] or [Prep Group] (circle)...signature/date: _____

c. Problem (Include all relevant specific results; attach data if necessary)

MSD low for 4 compounds see attached.

2. Known or Probable Causes(s)

3. Discussion and Proposed Action

Other Description:

☐ Re-log
☐ Entire Batch
☐ Following Samples: _____
☐ Re-leach
☐ Re-extract
☐ Re-digest
☐ Revise EDD
☐ Change Test Code to _____
☐ Place On/Take Off Hold (circle)

Narrate. MS, & BS incorrect. No hits in samples.

4. Project Manager Instructions...signature/date:

☐ Concur with Proposed Action
☐ Disagree with Proposed Action; See Instruction
☐ Include in Case Narrative
☐ Client Contacted:
Date/Person _____
☐ Add
☐ Cancel

5. Final Action...signature/date:

☐ Verified re-[log][leach][extract][digest][analysis] (circle)
☒ Included in Case Narrative
☐ Hard Copy COC Revised
☐ Electronic COC Revised
☐ EDD Corrections Completed

Other Explanation:

When Final Action has been recorded, forward original to QA Specialist for distribution and filing.

Route Distribution of Completed SDR

☒ X Initiator
☒ X Lab General Manager: M. Taylor
☒ X Project Mgr: Stone/Johnson/Haslett
☒ X Technical Mgr: Wesson/Daniels
☒ X QA (file)
☐ Data Management: Feldman
☐ Sample Prep: Beegle/Kiger

Route Distribution of Completed SDR

☐ Metals: Beegle
☐ Inorganic: Perrone
☐ GC/LC: Kiger
☐ MS: Rychlak/Layman
☐ Log-in: Melnic
☐ Admin: Soos
☐ Other: _____



GLOSSARY OF HERBICIDE DATA

DATA QUALIFIERS

- U** = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J** = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B** = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E** = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I** = Interference.

ABBREVIATIONS

- BS** = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD** = Indicates blank spike duplicate.
- MS** = Indicates matrix spike.
- MSD** = Indicates matrix spike duplicate.
- DL** = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA** = Not Applicable.
- DF** = Dilution Factor.
- NR** = Not Required.
- SP** = Indicates Spiked Compound.



GLOSSARY OF HERBICIDE DATA

- P = This flag is used for an Herbicide target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
- D = This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- C = This flag applies to a compound that has been confirmed by HPLC.

Lionville Laboratory, Inc.

Herbicides, Special List

Report Date: 05/09/03 15:59

RFW Batch Number: 0305L329

Client: TNU-HANFORD F03-006

Work Order: 11343606001 Page: 1

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	Cust ID:	B16W91	B16W91	B16W91	PBLKSR	PBLKSR BS	PBLKSR BSD
Sample	RFW#:	007	007 MS	007 MSD	03LE0531-MB1	03LE0531-MB1	03LE0531-MB1
Information	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Surrogate:	DCAA	63 %	88 %	49 %	84 %	70 %	92 %
		-----fl-----	-----fl-----	-----fl-----	-----fl-----	-----fl-----	-----fl-----
Dalapon		180 U	73 %	58 %	170 U	69 %	79 %
Dicamba		72 U	83 %	40 * %	67 U	60 %	89 %
Dichloroprop		180 U	76 %	49 * %	170 U	65 %	86 %
2,4-D		36 U	65 %	46 %	33 U	61 %	78 %
2,4,5-TP (Silvex)		18 U	71 %	65 %	17 U	66 %	81 %
2,4,5-T		18 U	70 %	44 * %	17 U	64 %	82 %
2,4-DB		180 U	72 %	44 * %	170 U	60 %	82 %
Dinoseb		18 U	75 %	70 %	17 U	74 %	84 %

Handwritten signature
7/17/03

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.
 %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

7915 8463 3226

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-006-62		Page 1 of 1	
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (12.5'-15')		SAF No. F03-006		Air Quality <input type="checkbox"/>			
Ice Chest No. ERC 96 05F		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express			
Shipped To RECRA EDERLINE SERVICES (Formerly TMA) 4/22/03		Offsite Property No. A030220		Bill of Lading/Air Bill No. SEE OSPL					
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None
				Type of Container	aG	aG	aG	aG	aG
				No. of Container(s)	1	1	1	1	1
				Volume	120mL	60mL	120mL	60mL	60mL
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions 4/22/03	Tritium - H3	
Sample No.	Matrix *	Sample Date	Sample Time						
B16W79	SOIL	4/28/03	1358	X	X	X			
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS 4/22/03 ** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. (1) Technetium-99; Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237 4/22/03	
Relinquished By/Removed From <i>Greg Hulstrom</i> 4/22/03		Date/Time 1645		Received By/Stored In <i>REFIA 3728</i> 42803		Date/Time 1645		Matrix * S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other	
Relinquished By/Removed From <i>REFIA 3728</i>		Date/Time 5103 1100		Received By/Stored In <i>SJGALEX</i> 5103 1100		Date/Time 1100			
Relinquished By/Removed From <i>SJGALEX</i>		Date/Time 5103 1100		Received By/Stored In FED EX		Date/Time			
Relinquished By/Removed From <i>Greg Hulstrom</i>		Date/Time 5.2.03 0945		Received By/Stored In <i>Greg Hulstrom</i>		Date/Time 5.2.03 0945			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
LABORATORY SECTION		Received By		Title				Date/Time	
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time	

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						F03-006-63		Page 1 of 1	
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (17.5'-20')				SAF No. F03-006		Air Quality <input type="checkbox"/>			
Ice Chest No. ERC 96 056		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To EDERLINE SERVICES (Formerly TMA) RELPA <i>4/22/03</i>		Offsite Property No. A030220				Bill of Lading/Air Bill No. SOE 03PC					
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None		
				Type of Container	aG	aG	aG	aG	aG		
				No. of Container(s)	1	1	1	1	1		
				Volume	120mL	60mL	120mL	60mL	60mL		
				SAMPLE ANALYSIS		Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions <i>Ag 4/22/03</i>	Tritium - H3	
Sample No.	Matrix *	Sample Date	Sample Time								
B16W80	SOIL	4/28/03	1510	X	X	X					
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS			
Relinquished By/Removed From <i>Greg Thomas</i>		Date/Time <i>4/28/03</i>		Received By/Stored In <i>REF 1A 3728</i>		Date/Time <i>4/28/03 1645</i>		<p>** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis.</p> <p><i>(1) Technetium-99, Strontium-89,90 - Total Sr, Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237</i></p> <p><i>Personnel not available to relinquish samples from the 3728 Ref # 1A on 5/1/03</i></p>			
Relinquished By/Removed From <i>REF 1A 3728</i>		Date/Time <i>5/1/03 1100</i>		Received By/Stored In <i>8JGALE</i>		Date/Time <i>5/1/03 1100</i>					
Relinquished By/Removed From <i>SJGALE</i>		Date/Time <i>5/1/03</i>		Received By/Stored In <i>FED EX</i>		Date/Time					
Relinquished By/Removed From <i>Joe E</i>		Date/Time <i>5-2-03 0945</i>		Received By/Stored In <i>Dr. Miller</i>		Date/Time <i>5-2-03 0945</i>					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
LABORATORY SECTION		Received By		Title				Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time			

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-006-64		Page 1 of 1						
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N Data Turnaround 45 Days						
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (27.5'-30')		SAF No. F03-006		Air Quality <input type="checkbox"/>								
Ice Chest No. ERC 96056		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express								
Shipped To ECRA ECRINE SERVICES (Formerly TMA) <i>4/22/03</i>		Offsite Property No. A030220		Bill of Lading/Air Bill No. SGE 057C										
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None					
				Type of Container	aG	aG	aG	aG	aG					
				No. of Container(s)	1	1	1	1	1					
				Volume	120mL	60mL	120mL	60mL	60mL					
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions.	Tritium - H3						
Sample No.	Matrix *	Sample Date	Sample Time											
B16W81	SOIL	4/29/03	0745	X	X	X								B16W81 (W/SLF)
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS <i>182 4/22/03</i>				Matrix *		
Relinquished By/Removed From <i>[Signature]</i>		Date/Time 4/29/03 1400		Received By/Stored In <i>R. Allen</i>		Date/Time 4/29/03 1400		** The laboratory is to achieve a detection limit of 30.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. (1) Technetium-99; Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237 <i>182 4/22/03</i> Personnel not available to relinquish samples from the 3728 Ref # 18 on 5/1/03				S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other		
Relinquished By/Removed From <i>R. Allen</i>		Date/Time 4/29/03 1400		Received By/Stored In <i>IB 3728</i>		Date/Time 4/29/03								
Relinquished By/Removed From <i>IB 3728</i>		Date/Time 5/1/03 1100		Received By/Stored In <i>SGAL</i>		Date/Time 5/10/03 1100								
Relinquished By/Removed From <i>SGAL</i>		Date/Time 5/1/03 1100		Received By/Stored In <i>FED EX</i>		Date/Time								
Relinquished By/Removed From <i>[Signature]</i>		Date/Time 5/2/03 0945		Received By/Stored In <i>[Signature]</i>		Date/Time 5/2/03 0945								
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time								
LABORATORY SECTION		Received By		Title				Date/Time						
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time						

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-65		Page 1 of 1		
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (37.5'-40')		SAF No. F03-006		Air Quality <input type="checkbox"/>					
Ice Chest No. ERC 96 05C		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To RECRA 1st EDERLINE SERVICES (Formerly TMA) 4/22/03		Offsite Property No. A030220		Bill of Lading/Air Bill No. SGR 08PC							
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None		
				Type of Container	aG	aG	aG	aG	aG		
				No. of Container(s)	1	1	1	1	1		
				Volume	120mL	60mL	120mL	60mL	60mL		
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions.	Tritium - H3			
Sample No.	Matrix *	Sample Date	Sample Time								
B16W82	SOIL	4/29/03	0900	X	X	X				B16W48 (W5CF)	
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS 7/8/2 4/22/03 **The laboratory is to achieve a detection limit of 30.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. (4) Technetium-99; Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237 7/8/2 4/22/03 Personnel not available to relinquish samples from the 3728 Ref # 10 on 5/1/03			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Matthew Hulstrom		4/29/03 1400		R. F. Lee		4/29/03 1400					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
R. F. Lee		4-29-03 1400		IB		4-29-03 1400					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
IB		3728 5103 1100		SGALE		5103 1100					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
SGALE		5103 1100		SGALE		5103 1100					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
SGALE		5-2-03 0945		SGALE		5-2-03 0945					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
LABORATORY SECTION		Received By		Title				Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time			

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-66		Page 1 of 1		
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (47.5'-50')		SAF No. F03-006		Air Quality <input type="checkbox"/>					
Ice Chest No. ERC 96 056		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To NEURA EBERLINE SERVICES (Formerly TMA) <i>4/24/03</i>		Offsite Property No. A030220		Bill of Lading/Air Bill No. SEE OSC							
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage		Preservation	Cool 4C	Cool 4C	Cool 4C	None	None				
		Type of Container	aG	aG	aG	aG	aG				
		No. of Container(s)	1	1	1	1	1				
		Volume	120mL	60mL	120mL	60mL	60mL				
SAMPLE ANALYSIS		Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions	Tritium - H3					
		<i>982 4/24/03</i>						<i>TICB:</i>			
Sample No.	Matrix *	Sample Date	Sample Time								
B16W83	SOIL	4/24/03	1020	X	X	X					B16W83 (W5CF)
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p><i>982 4/24/03</i></p> <p>** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis.</p> <p>(1) Technetium-99; Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237</p> <p><i>982 4/24/03</i></p> <p>Personnel not available to relinquish samples from the 3728 Ref # 18 on 5/1/03</p>			
<i>M. Johansen</i>		4/24/03 1400		<i>R. F. Hulstrom</i>		4/24/03 1400					
<i>R. F. Hulstrom</i>		4/29/03		<i>IB</i>		3728 4/29/03					
<i>IB</i>		5/03 1100		<i>SJ GALE</i>		5/03 1100					
<i>SJ GALE</i>		5/03 1100		<i>FED EX</i>							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>Matrix *</p> <p>S=Soil SE=Sediment SO=Solid SI=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other</p>			
<i>982 Ex</i>		5-2-03 0945		<i>2/Smith</i>		5-2-03 0945					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
LABORATORY SECTION		Received By		Title				Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time			

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-73		Page 1 of 1					
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days				
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (17.5'-20')				SAF No. F03-006		Air Quality <input type="checkbox"/>						
Ice Chest No. ERC 96 056		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express								
Shipped To RECRA EDERLINE SERVICES (Formerly TMA) 4/22/03		Offsite Property No. A030220				Bill of Lading/Air Bill No. 38E 03PC								
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage					Preservation	Cool 4C	Cool 4C	Cool 4C	None	None				
					Type of Container	aG	aG	aG	aG	aG				
					No. of Container(s)	1	1	1	1	1				
					Volume	120mL	60mL	120mL	60mL	60mL				
SAMPLE ANALYSIS					Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions 4/22/03	Tritium - H3					
Sample No.	Matrix *	Sample Date	Sample Time											
B16W90	SOIL	4/28/03	1510	X	X	X								
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *		
Relinquished By/Removed From <i>Greg Thomas</i>		Date/Time 4/28/03 1645		Received By/Stored In <i>REF 1A</i>		Date/Time 3728 42803 1645		AA The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. (1) Technetium-99, Strontium-89,90 - Total Sr, Isotopic Thorium (Thorium-232), Carbon-14, Iodine-129, Nickel-63, Neptunium-237 4/22/03 Personnel not available to relinquish samples from the 3728 Ref # <u>1A</u> on <u>5/1/03</u>				S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other		
Relinquished By/Removed From <i>REF 1A</i>		Date/Time 5/03 1100		Received By/Stored In <i>SJGALC</i>		Date/Time 5/03 1100								
Relinquished By/Removed From <i>25 CALO</i>		Date/Time 5/03 1100		Received By/Stored In <i>FED EX</i>		Date/Time								
Relinquished By/Removed From <i>Red E</i>		Date/Time 5-2-03 0945		Received By/Stored In <i>Min</i>		Date/Time 5-2-03 0945								
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time								
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time								
LABORATORY SECTION		Received By		Title				Date/Time						
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time						

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-006-74		Page 1 of 1										
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N Data Turnaround 45 Days										
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (0.5')		SAF No. F03-006		Air Quality <input type="checkbox"/>												
Ice Chest No. ERC 96 056		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express												
Shipped To AD5103 REIRA BERLINE SERVICES (Formerly TMA)		Offsite Property No. A030220		Bill of Lading/Air Bill No. SEE 05/PC														
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C												
				Type of Container	aG	aG												
				No. of Container(s)	1	1												
				Volume	60mL	250mL												
SAMPLE ANALYSIS				Pesticides - 8081	Chloro- Herbicides - EPA8151													
Sample No.	Matrix *	Sample Date	Sample Time															
B16W91	SOIL	4/28/03	130	X	X													
CHAIN OF POSSESSION				Sign/Print Names		SPECIAL INSTRUCTIONS						Matrix *						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		Personnel not available to relinquish samples from the 3728 Ref # <u>1A</u> on <u>5/11/03</u>						S=Soil SE=Sediment SO=Solid SI=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue W=Wipe L=Liquid V=Vegetation X=Other				
<i>Greg Thomas</i>		4/28/03		REF 1A 3728		4/28/03 1645												
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time												
REF 1A 3728		5103 1100		SD GALEY		5/03 1100												
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time												
SD GALEY		5/03 1100		FED EX														
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time												
<i>Steve En</i>		5-2-03 0945		<i>[Signature]</i>		5-2-03 0945												
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time												
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time												
LABORATORY SECTION		Received By		Title		Date/Time												
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time												

LIONVILLE LABORATORY INCORPORATED

SAMPLE RECEIPT CHECKLIST

CLIENT: TNU Hamford

Purchase Order/Project:

DATE: 5-2-03

AF# / SOW# / Release #: F03-006

Laboratory SDG #:

0305L329

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

- | | | | | |
|--|---|-----------------------------|---|--|
| 1. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 2. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 3. Airbill # recorded? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 5. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 7. All samples on coc received? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 8. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 10. Shipment meets LVL1 Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 11. Where applicable, bar code labels are affixed to coc? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 12. coc signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 13. coc will be faxed or emailed to client? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 14. Project Manager/Client contacted concerning discrepancies? (name/date) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |

Cooler # / temp (°C) and Comments:

ELC 96-056 / 1.3°C

Laboratory Sample Custodian:

Laboratory Project Manager:

[Signature]

Lionville Laboratory, Inc.
PEST/PCB ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2194

DATE RECEIVED: 05/02/03

LVL LOT # :0305L329

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B16W91	007	S	03LX0536	04/28/03	05/05/03	05/23/03
B16W91	007 MS	S	03LX0536	04/28/03	05/05/03	05/23/03
B16W91	007 MSD	S	03LX0536	04/28/03	05/05/03	05/23/03

LAB QC:

PBLKUG	MB1	S	03LX0536	N/A	05/05/03	05/23/03
PBLKUG	MB1 BS	S	03LX0536	N/A	05/05/03	05/23/03

9/17/03





Analytical Report

Client: TNU-HANFORD F03-006
LVL #: 0305L329
SDG/SAF # H2194/F03-006

W.O. #: 11343-606-001-9999-00
Date Received: 05-02-2003

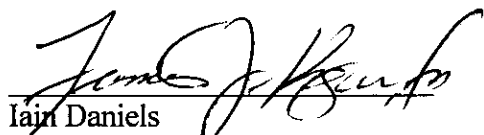
PESTICIDE

One (1) soil sample was collected on 04-28-2003.

The sample and its associated QC samples were extracted on 05-05-2003 and analyzed according to Lionville Laboratory OPs based on SW846, 3rd Edition procedures on 05-23-2003. The extraction procedure was based on method 3540 and the extracts were analyzed based on method 8081A.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from a sample that met LvLI's sample acceptance policy.
2. The required holding time for extraction and analysis has been met.
3. The method blank was below the reporting limits for all target compounds.
4. Two (2) of ten (10) surrogate recoveries were outside acceptance criteria. However, EPA CLP surrogate recovery criteria were met (i.e., no more than one outlier per sample).
5. All blank spike recoveries were within acceptance criteria.
6. One (1) of twelve (12) matrix spike recoveries was outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
7. All initial calibrations associated with this data set were within acceptance criteria.
8. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
9. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.


Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated


Date

son\c:\group\data\pest\tnu hanford\0305-329.pes

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 8 pages.

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 036C205

Initiator: D. Walker
Date: 6/17/03
Client: TNU

Batch: 0305L329
Samples: 007 T
Method: SW846MCAWW/CPLI

Parameter: 0608+V
Matrix: Soil
Prep Batch: 03LX0536

1. Reason for SDR

a. COC Discrepancy ☐ Tech Profile Error ☐ Client Request ☐ Sampler Error on C-O-C
☐ Transcription Error ☐ Wrong Test Code ☐ Other _____

b. General Discrepancy

☐ Missing Sample/Extract ☐ Container Broken ☐ Wrong Sample Pulled ☐ Label ID's Illegible
☐ Hold Time Exceeded ☐ Insufficient Sample ☐ Preservation Wrong ☐ Received Past Hold
☐ Improper Bottle Type ☐ Not Amenable to Analysis

Note: Verified by [Log-In] or [Prep Group] (circle)...signature/date: _____

c. Problem (Include all relevant specific results; attach data if necessary)

Matrix spike duplicate was high for 4,4'-DDT. The matrix spike recoveries were within control limits. There were no hits above reporting limits for 4,4'-DDT. (See attached sheet)

2. Known or Probable Causes(s)

3. Discussion and Proposed Action

Other Description: Narrative - no significant impact
6/10/03

☐ Re-log
☐ Entire Batch
☐ Following Samples: _____
☐ Re-leach
☐ Re-extract
☐ Re-digest
☐ Revise EDD
☐ Change Test Code to _____
☐ Place On/Take Off Hold (circle)

4. Project Manager Instructions...signature/date: [Signature] 6/10/03

☒ Concur with Proposed Action
☐ Disagree with Proposed Action; See Instruction
☐ Include in Case Narrative
☐ Client Contacted:
Date/Person _____
☐ Add
☐ Cancel

5. Final Action...signature/date: [Signature] 6/17/03

Other Explanation:

☒ Verified re-[log][leach][extract][digest][analysis] (circle)
☐ Included in Case Narrative
☐ Hard Copy COC Revised
☐ Electronic COC Revised
☐ EDD Corrections Completed

When Final Action has been recorded, forward original to QA Specialist for distribution and filing.

Route Distribution of Completed SDR

☒ Initiator
☐ Lab General Manager: M. Taylor
☒ Project Mgr: Stone/Johnson/Haslett
☒ Technical Mgr: Wesson/Daniels
☒ QA (file)
☐ Data Management: Feldman
☐ Sample Prep: Beegle/Kiger

Route Distribution of Completed SDR

☐ Metals: Beegle
☐ Inorganic: Perrone
☐ GC/LC: Kiger
☐ MS: Rychlak/Layman
☐ Log-in: Melnic
☐ Admin: Soos
☐ Other: _____



GLOSSARY OF PESTICIDE/PCB DATA

DATA QUALIFIERS

- U = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I = Interference.

ABBREVIATIONS

- BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD = Indicates blank spike duplicate.
- MS = Indicates matrix spike.
- MSD = Indicates matrix spike duplicate.
- DL = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA = Not Applicable.
- DF = Dilution Factor.
- NR = Not Required.
- SP = Indicates Spiked Compound.



GLOSSARY OF PESTICIDE/PCB DATA

- P** = This flag is used for an PESTICIDE/PCB target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
- D** = This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- C** = This flag applies to a compound that has been confirmed by GC/MS.

Lionville Laboratory, Inc.
Pesticide/PCBs by GC, CLP List

Report Date: 05/28/03 17:55

RFW Batch Number: 03051329

Client: TNUHANFORD F03-006 H2194 Work Order: 11343606001 Page: 1

Sample Information	Cust ID:	B16W91	B16W91	B16W91	PBLKUG	PBLKUG BS
	RFW#:	007	007 MS	007 MSD	03LX0536-MB1	03LX0536-MB1
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	100 %	95 %	105 %	100 %	95 %
	Decachlorobiphenyl	125 * %	120 %	125 * %	120 %	115 %
		=====fl=====	=====fl=====	=====fl=====	=====fl=====	=====fl=====
Alpha-BHC		1.8 U	1.8 U	1.8 U	1.7 U	1.7 U
Beta-BHC		1.8 U	1.8 U	1.8 U	1.7 U	1.7 U
Delta-BHC		1.8 U	1.8 U	1.8 U	1.7 U	1.7 U
gamma-BHC (Lindane)		1.8 U	104 %	114 %	1.7 U	104 %
Heptachlor		1.8 U	98 %	106 %	1.7 U	102 %
Aldrin		1.8 U	94 %	104 %	1.7 U	96 %
Heptachlor epoxide		1.8 U	1.8 U	1.8 U	1.7 U	1.7 U
Endosulfan I		1.8 U	1.8 U	1.8 U	1.7 U	1.7 U
Dieldrin		3.6 U	112 %	121 %	3.3 U	112 %
4,4'-DDE		3.6 U	3.6 U	3.6 U	3.3 U	3.3 U
Endrin		3.6 U	118 %	128 %	3.3 U	115 %
Endosulfan II		3.6 U	3.6 U	3.6 U	3.3 U	3.3 U
4,4'-DDD		3.6 U	3.6 U	3.6 U	3.3 U	3.3 U
Endosulfan sulfate		3.6 U	3.6 U	3.6 U	3.3 U	3.3 U
4,4'-DDT		3.6 U	114 %	124 * %	3.3 U	107 %
Methoxychlor		18 U	18 U	18 U	17 U	17 U
Endrin ketone		3.6 U	3.6 U	3.6 U	3.3 U	3.3 U
Endrin aldehyde		3.6 U	3.6 U	3.6 U	3.3 U	3.3 U
alpha-Chlordane		1.8 U	1.8 U	1.8 U	1.7 U	1.7 U
gamma-Chlordane		1.8 U	1.8 U	1.8 U	1.7 U	1.7 U
Toxaphene		180 U	180 U	180 U	170 U	170 U

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.
%= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

Handwritten signature/initials

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client <u>Thru-Hanford F03-0006</u>	Refrigerator #	A	B	C	D	E	
Est. Final Proj. Sampling Date _____	#/Type Container	Liquid					
Project # <u>11343-6006-001-9999.00</u>		Solid					
Project Contact/Phone # _____	Volume	Liquid					
Lionville Laboratory Project Manager <u>03</u>		Solid					
QC <u>Spec</u> Del <u>Std</u> TAT <u>30 day</u>	Preservatives						
Date Rec'd <u>5-2-03</u> Date Due <u>6-1-03</u>	ANALYSES REQUESTED →	ORGANIC			INORG		
		VOA	BNA	Pest/PCB	Herb	Metal	CN

MATRIX CODES:

S - Soil
 SE - Sediment
 SO - Solid
 SL - Sludge
 W - Water
 O - Oil
 A - Air
 DS - Drum
 Solids
 DL - Drum
 Liquids
 L - EP/TCLP
 Leachate
 WI - Wipe
 X - Other
 F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)		Matrix	Date Collected	Time Collected	Lionville Laboratory Use Only									
		MS	MSD													
001	Bikew79			S	4/28/03	1356										
002	80			I	1	1510										
003	81			I	4/29/03	0745										
004	82			I	1	0900										
005	83			I	1	1020										
006	90			I	4/28/03	1510										
007	91			I	1	1130										

Special Instructions: Run Matrix QCSaf # F03006

DATE/REVISIONS:

- _____
- _____
- _____
- _____
- _____
- _____

Lionville Laboratory Use Only

Samples were/
 1) Shipped ☒ or
 Hand Delivered _____
 Airbill # See below
 2) Ambient or Chilled
 3) Received in Good
 Condition ☒ or N
 4) Samples
 Properly Preserved ☒ or N
 5) Received Within
 Holding Times ☒ or N

Tamper Resistant Seal was:
 1) Present on Outer
 Package ☒ or N
 2) Unbroken on Outer
 Package ☒ or N
 3) Present on Sample
☒ or N
 4) Unbroken on
 Sample ☒ or N
 COC Record Present
 Upon Sample Rec't
☒ or N
 Cooler
 Temp. 1.3 °C

Relinquished by	Received by	Date	Time
FedEx	<u>DJ Smith</u>	5-2-03	0945

Relinquished by	Received by	Date	Time
ORIGINAL	COMPOSITE		
REWRITTEN	WASTE		

Discrepancies Between
 Samples Labels and
 COC Record? Y or ☒ N
 NOTES:

7915 8463 3226

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-62		Page 1 of 1		
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (12.5'-15')				SAF No. F03-006		Air Quality <input type="checkbox"/>			
Ice Chest No. ERC 96 05F		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To RETRA BERLINE SERVICES (Formerly TMA) 4/22/03		Offsite Property No. A030220				Bill of Lading/Air Bill No. SEE OSL					
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None		
				Type of Container	aG	aG	aG	aG	aG		
				No. of Container(s)	1	1	1	1	1		
				Volume	120mL	60mL	120mL	60mL	60mL		
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions	Tritium - H3			
Sample No.	Matrix *	Sample Date	Sample Time								
B16W79	SOIL	4/28/03	1356	X	X	X					
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS 4/22/03				Matrix * S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
GREG THOMPSON		4/20/03		REF 1A 3728		42803 1645					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
REF 1A 3728		5103 1100		SJGALE		5103 1100					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
SJGALE		5103 1100		FED EX							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
6/20/03		5-2-03 0945		5-2-03 0945							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
LABORATORY SECTION				Title				Date/Time			
FINAL SAMPLE DISPOSITION				Disposal Method				Disposed By			
								Date/Time			

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-63		Page 1 of 1		
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (17.5'-20')		SAF No. F03-006		Air Quality <input type="checkbox"/>					
Ice Chest No. ERC 96 056		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To EBERLINE SERVICES (Formerly TMA) RELPA <i>4/22/03</i>		Offsite Property No. A030220		Bill of Lading/Air Bill No. SOE 03PC							
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None		
				Type of Container	aG	aG	aG	aG	aG		
				No. of Container(s)	1	1	1	1	1		
				Volume	120mL	60mL	120mL	60mL	60mL		
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions <i>AS 4/22/03</i>	Tritium - H3			
Sample No.	Matrix *	Sample Date	Sample Time								
B16W80	SOIL	4/28/03	1560	X	X	X					
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS <i>78pc 4/22/03</i> ** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. (1) Technetium-99; Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237 <i>78pc 4/22/03</i> Personnel not available to relinquish samples from the 3728 Ref # <u>1A</u> on <u>5/1/03</u>			
Relinquished By/Removed From <i>Greg Thomas 4/22/03</i>		Date/Time <i>1645</i>		Received By/Stored In <i>REF 1A 3728</i>		Date/Time <i>42803 1645</i>					
Relinquished By/Removed From <i>REF 1A 3728</i>		Date/Time <i>5103 1100</i>		Received By/Stored In <i>SJGALE</i>		Date/Time <i>5103 1100</i>					
Relinquished By/Removed From <i>SJGALE</i>		Date/Time <i>1100</i>		Received By/Stored In <i>FED EX</i>		Date/Time					
Relinquished By/Removed From <i>900 En</i>		Date/Time <i>5-2-03 0945</i>		Received By/Stored In <i>5/2/03 0945</i>		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		Matrix * S=Soil SE=Sediment SO=Solid SI=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WT=Wipe L=Liquid V=Vegetation X=Other			
LABORATORY SECTION		Received By		Title		Date/Time					
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time					

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-64		Page 1 of 1		
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (27.5°-30°)		SAF No. F03-006		Air Quality <input type="checkbox"/>					
Ice Chest No. ERC 96056		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To REIRA BERLINE SERVICES (Formerly TMA) 4/22/03		Offsite Property No. A030220		Bill of Lading/Air Bill No. SGE 05PC							
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None		
				Type of Container	aG	aG	aG	aG	aG		
				No. of Container(s)	1	1	1	1	1		
				Volume	120mL	60mL	120mL	60mL	60mL		
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions.	Tritium - H3			
Sample No.	Matrix *	Sample Date	Sample Time								
B16W81	SOIL	4/29/03	0745	X	X	X				BLOWN (W/SLF)	
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS			
Relinquished By/Removed From <i>M. Johansen</i>		Date/Time 4/29/03 1400		Received By/Stored In <i>R. Hulstrom</i>		Date/Time 4/29/03 1400		** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. (1) Technetium-99, Strontium-89,90 - Total Sr, Isotopic Thorium (Thoron-232), Carbon-14, Iodine-129, Nickel-63, Neptunium-237. Personnel not available to relinquish samples from the 3728 Ref #1B on 5/1/03			
Relinquished By/Removed From <i>R. Hulstrom</i>		Date/Time 4/29/03 1400		Received By/Stored In <i>IB 3728</i>		Date/Time 4/29/03 1400					
Relinquished By/Removed From <i>IB 3728</i>		Date/Time 5/1/03 1100		Received By/Stored In <i>SGAL</i>		Date/Time 5/1/03 1100					
Relinquished By/Removed From <i>SGAL</i>		Date/Time 5/1/03 1100		Received By/Stored In <i>FED ex</i>		Date/Time					
Relinquished By/Removed From <i>SGAL</i>		Date/Time 5/2/03 0945		Received By/Stored In <i>SGAL</i>		Date/Time 5/2/03 0945					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		Matrix *			
LABORATORY SECTION		Received By		Title				Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time			

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-65		Page 1 of 1		
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (37.5°-40°)		SAF No. F03-006		Air Quality <input type="checkbox"/>					
Ice Chest No. ERC 9.6 055		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To RECRA 1st EDGE LINE SERVICES (Formerly TMA) 4/22/03		Offsite Property No. A030220				Bill of Lading/Air Bill No. 5625 05PC					
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage			Preservation	Cool 4C	Cool 4C	Cool 4C	None	None			
			Type of Container	aG	aG	aG	aG	aG			
			No. of Container(s)	1	1	1	1	1			
			Volume	120mL	60mL	120mL	60mL	60mL			
SAMPLE ANALYSIS			Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions 4/22/03	Tritium - H3				
								TITIO:			
Sample No.	Matrix *	Sample Date	Sample Time								
B16W82	SOIL	4/29/03	0900	X	+	+	+				B16W48 (WELF)
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>4/22/03</p> <p>** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis.</p> <p>(1) Technetium-99, Strontium-89,90 - Total Sr, Isotopic Thorium (Thorium-232), Carbon-14, Iodine-129, Nickel-63, Neptunium-237 754 4/22/03</p> <p>Personnel not available to relinquish samples from the 3728 Ref # 1B on 5/1/03</p>			
4/21/03 1400		4/21/03 1400		4/21/03 1400		4/21/03 1400					
4/29/03 1400		4/29/03 1400		4/29/03 1400		4/29/03 1400					
5/10/03 1100		5/10/03 1100		5/10/03 1100		5/10/03 1100					
5/10/03 1100		5/10/03 1100		5/10/03 1100		5/10/03 1100					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>5/10/03 0945</p> <p>5/10/03 0945</p>			
5/10/03 0945		5/10/03 0945		5/10/03 0945		5/10/03 0945					
5/10/03 0945		5/10/03 0945		5/10/03 0945		5/10/03 0945					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>5/10/03 0945</p> <p>5/10/03 0945</p>			
5/10/03 0945		5/10/03 0945		5/10/03 0945		5/10/03 0945					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>5/10/03 0945</p> <p>5/10/03 0945</p>			
5/10/03 0945		5/10/03 0945		5/10/03 0945		5/10/03 0945					
LABORATORY SECTION		Received By		Title				Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time			

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-006-66		Page 1 of 1							
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N Data Turnaround 45 Days							
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (47.5'-50')		SAF No. F03-006		Air Quality <input type="checkbox"/>									
Ice Chest No. ERC 96 056		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express									
Shipped To PERRA EBERLINE SERVICES (Formerly TMA) <i>per 4/14/03</i>		Offsite Property No. A030220		Bill of Lading/Air Bill No. SEE OSPC											
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None						
				Type of Container	aG	aG	aG	aG	aG						
				No. of Container(s)	1	1	1	1	1						
				Volume	120mL	60mL	120mL	60mL	60mL						
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions.	Tritium - H3							
								<i>per 4/14/03</i>							
Sample No.	Matrix *	Sample Date	Sample Time												
B16W83	SOIL	4/24/03	1020	X	X	X									B16W83 (W5CF)
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *			
Relinquished By/Removed From <i>John Hansen</i>		Date/Time 4/24/03 1400		Received By/Stored In <i>R. F. Lee</i>		Date/Time 4/24/03 1400		** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. (1) - Technetium-99; Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237 <i>per 4/14/03</i>				S=Soil SE=Sediment SO=Solid SI=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other			
Relinquished By/Removed From <i>R. F. Lee</i>		Date/Time 4.29.03		Received By/Stored In <i>IB</i>		Date/Time 4.29.03									
Relinquished By/Removed From <i>IB</i>		Date/Time 5 1 07 1100		Received By/Stored In <i>SJ GALE</i>		Date/Time 5 1 03 1100									
Relinquished By/Removed From <i>SJ GALE</i>		Date/Time 5 1 03 1100		Received By/Stored In <i>FED EX</i>		Date/Time									
Relinquished By/Removed From <i>per 5.2.03 0945</i>		Date/Time 5.2.03 0945		Received By/Stored In <i>per 5.2.03 0945</i>		Date/Time									
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time									
LABORATORY SECTION		Received By		Title						Date/Time					
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time							

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-73		Page 1 of 1		
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (17.5'-20')				SAF No. F03-006		Air Quality <input type="checkbox"/>			
Ice Chest No. ERC 96 056		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To REERA EDERLINE SERVICES (Pompano Beach, FL) 4/22/03		Offsite Property No. A030220				Bill of Lading/Air Bill No. 35E 03PC					
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None		
				Type of Container	aG	aG	aG	aG	aG		
				No. of Container(s)	1	1	1	1	1		
				Volume	120mL	60mL	120mL	60mL	60mL		
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions	Tritium - H3			
				<i>A 9/22/03</i>							
Sample No.	Matrix *	Sample Date	Sample Time								
B16W90	SOIL	4/28/03	1510	X	X	X					
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>** The laboratory is to achieve a detection limit of 30.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis.</p> <p>(1) Technetium-99, Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232), Carbon-14, Iodine-129, Nickel-63, Neptunium-237</p> <p>Personnel not available to relinquish samples from the 3728 Ref # 1A on 5/1/03</p>			
<i>Greg Johnson</i>		1645		REF 1A 3728		42803 1645					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
REF 1A 3728		5/1/03 1100		SJGALC/ALC		5/1/03 1100					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
SJGALC/ALC		5/1/03 1100		FED EX							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>Matrix *</p> <p>S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other</p>			
Gled E		5-2-03 0915		ALC		5-2-03 0945					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
LABORATORY SECTION		Received By		Title				Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time			

FH-Central Plateau Project				CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-006-74		Page 1 of 1			
Collector Johansen/Pope/Pfister				Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N Data Turnaround 45 Days			
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling				Sampling Location 216-A-37 (C4106); (0.5')		SAF No. F03-006		Air Quality <input type="checkbox"/>					
Ice Chest No. ERC 96 056				Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To MS103 RECRA EBERLINE SERVICES (Formerly TMA)				Offsite Property No. A030 220		Bill of Lading/Air Bill No. SEE 05PC							
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation		Cool 4C	Cool 4C						
				Type of Container		aG	aG						
				No. of Container(s)		1	1						
				Volume		60mL	250mL						
SAMPLE ANALYSIS				Pesticides - 8081		Chloro- Herbicides - EPA8151							
Sample No.		Matrix *		Sample Date		Sample Time							
B16W91		SOIL		4/26/03		1130		X	X				
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS					
Relinquished By/Removed From <i>Greg Thomas</i> 4/26/03				Received By/Stored In <i>REF 1A 3728</i> 4/26/03 1645				Personnel not available to relinquish samples from the 3728 Ref # <i>1A</i> on <i>5/11/03</i>					
Relinquished By/Removed From <i>REF 1A 3728</i> 5103 1100				Received By/Stored In <i>SIGAL</i> 5/03 1100									
Relinquished By/Removed From <i>SIGAL</i> 5103 1100				Received By/Stored In <i>FED EX</i>									
Relinquished By/Removed From <i>Hand Ex</i> 5-2-03 0945				Received By/Stored In <i>Hand Ex</i> 5-2-03 0945									
Relinquished By/Removed From				Received By/Stored In									
Relinquished By/Removed From				Received By/Stored In									
LABORATORY SECTION		Received By		Title		Date/Time							
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time							

LIONVILLE LABORATORY INCORPORATED

SAMPLE RECEIPT CHECKLIST

Client: TNU Hamford

Order/Project:

DATE: 5-2-03

File # / SOW# / Release #: F03-006

Laboratory SDG #:

0305L329

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

- | | | | | |
|--|---|-----------------------------|---|--|
| 1. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 2. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 3. Airbill # recorded? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 5. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 7. All samples on coc received? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 8. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 10. Shipment meets Lvl1 Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 11. Where applicable, bar code labels are affixed to coc? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 12. coc signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 13. coc will be faxed or emailed to client? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 14. Project Manager/Client contacted concerning discrepancies? (name/date) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |

Cooler # / temp (°C) and Comments:

ELC 96-056 / 1.3°C

Laboratory Sample Custodian:

Laboratory Project Manager:

[Signature]

15

Lionville Laboratory, Inc.
PCB ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2194

DATE RECEIVED: 05/02/03

LVL LOT # :0305L329

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B16W79	001	S	03LE0576	04/28/03	05/14/03	05/21/03
B16W80	002	S	03LE0576	04/28/03	05/14/03	05/21/03
B16W81	003	S	03LE0576	04/29/03	05/14/03	05/21/03
B16W81	003 MS	S	03LE0576	04/29/03	05/14/03	05/21/03
B16W81	003 MSD	S	03LE0576	04/29/03	05/14/03	05/21/03
B16W82	004	S	03LE0576	04/29/03	05/14/03	05/21/03
B16W83	005	S	03LE0576	04/29/03	05/14/03	05/21/03
B16W90	006	S	03LE0576	04/28/03	05/14/03	05/21/03

LAB QC:

PBLKTS	MB1	S	03LE0576	N/A	05/14/03	05/22/03
PBLKTS	MB1 BS	S	03LE0576	N/A	05/14/03	05/22/03





Analytical Report

Client: TNU-HANFORD F03-006
LVL #: 0305L329
SDG/SAF # H2194/F03-006

W.O. #: 11343-606-001-9999-00
Date Received: 05-02-2003


PCB

Six (6) soil samples were collected on 04-28,29-2003.

The samples and their associated QC samples were extracted on 05-14-2003 and analyzed according to Lionville Laboratory OPs based on SW846, 3rd Edition procedures on 05-21,22-2003. The extraction procedure was based on method 3540 and the extracts were analyzed based on method 8082 for Aroclors only.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
2. Samples were extracted outside of holding time. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
3. Samples and their associated QC samples received a Sulfuric Acid and Sulfur cleanup.
4. The method blank was below the reporting limits for all target compounds.
5. One (1) of twenty (20) surrogate recoveries was outside acceptance criteria. However, EPA CLP surrogate recovery criteria were met (i.e., no more than one outlier per sample).
6. The blank spike recoveries were within acceptance criteria.
7. All matrix spike recoveries were within acceptance criteria.
8. All initial calibrations associated with this data set were within acceptance criteria.
9. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
10. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.


Jan Daniels
Laboratory Manager
Lionville Laboratory Incorporated

6/19/03
Date

son\vr\group\data\pest\tnu hanford\0305-329.pcb

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 15 pages.

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 0366209

Initiator: John Leach
Date: 6/17/03
Client: TMU

Batch: 03054329
Samples: 1-6
Method: SW846/MCAWW/CLP/

Parameter: OPBG
Matrix: Soil
Prep Batch: 03LE0576

1. Reason for SDR

a. COC Discrepancy ☐ Tech Profile Error ☐ Client Request ☐ Sampler Error on C-O-C
☐ Transcription Error ☐ Wrong Test Code ☐ Other

b. General Discrepancy

☐ Missing Sample/Extract ☐ Container Broken ☐ Wrong Sample Pulled ☐ Label ID's Illegible
☐ Hold Time Exceeded ☐ Insufficient Sample ☐ Preservation Wrong ☐ Received Past Hold
☐ Improper Bottle Type ☐ Not Amenable to Analysis

Note: Verified by [Log-In] or [Prep Group] (circle)...signature/date: _____

c. Problem (Include all relevant specific results; attach data if necessary)

Samples extracted 2 days past hold.

2. Known or Probable Causes(s)

3. Discussion and Proposed Action

Other Description:

☐ Re-log
☐ Entire Batch
☐ Following Samples: _____
☐ Re-leach
☐ Re-extract
☐ Re-digest
☐ Revise EDD
☐ Change Test Code to _____
☐ Place On/Take Off Hold (circle)

Narrative

4. Project Manager Instructions...signature/date:

☐ Concur with Proposed Action
☐ Disagree with Proposed Action; See Instruction
☐ Include in Case Narrative
☐ Client Contacted:
Date/Person _____
☐ Add
☐ Cancel

5. Final Action...signature/date:

Other Explanation:

☐ Verified re-[log][leach][extract][digest][analysis] (circle)
☒ Included in Case Narrative
☐ Hard Copy COC Revised
☐ Electronic COC Revised
☐ EDD Corrections Completed

When Final Action has been recorded, forward original to QA Specialist for distribution and filing.

Route Distribution of Completed SDR

☒ Initiator
☒ Lab General Manager: M. Taylor
☒ Project Mgr: Stone/Johnson/Haslett
☒ Technical Mgr: Wesson/Daniels
☒ QA (file)
☐ Data Management: Feldman
☐ Sample Prep: Beegle/Kiger

Route Distribution of Completed SDR

☐ Metals: Beegle
☐ Inorganic: Perrone
☐ GC/LC: Kiger
☐ MS: Rychlak/Layman
☐ Log-in: Melnic
☐ Admin: Soos
☐ Other: _____



GLOSSARY OF PESTICIDE/PCB DATA

DATA QUALIFIERS

- U = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I = Interference.

ABBREVIATIONS

- BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD = Indicates blank spike duplicate.
- MS = Indicates matrix spike.
- MSD = Indicates matrix spike duplicate.
- DL = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA = Not Applicable.
- DF = Dilution Factor.
- NR = Not Required.
- SP = Indicates Spiked Compound.



GLOSSARY OF PESTICIDE/PCB DATA

- P = This flag is used for an PESTICIDE/PCB target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
- D = This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- C = This flag applies to a compound that has been confirmed by GC/MS.

Lionville Laboratory, Inc.

PCBs by GC

Report Date: 06/17/03 15:45

RfW Batch Number: 0305L329

Client: TNUHANFORD F03-006 H2194 Work Order: 11343606001 Page: 1

Cust ID:		B16W79	B16W80	B16W81	B16W81	B16W81	B16W82
Sample Information	RPW#:	001	002	003	003 MS	003 MSD	004
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Decachlorobiphenyl	100 %	90 %	95 %	105 %	95 %	105 %
	Tetrachloro-m-xylene	60 %	75 %	85 %	90 %	85 %	90 %
=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====							
Aroclor-1016		16 U	16 U	16 U	98 %	96 %	16 U
Aroclor-1221		16 U	16 U	16 U	16 U	16 U	16 U
Aroclor-1232		16 U	16 U	16 U	16 U	16 U	16 U
Aroclor-1242		16 U	16 U	16 U	16 U	16 U	16 U
Aroclor-1248		16 U	16 U	16 U	16 U	16 U	16 U
Aroclor-1254		16 U	16 U	16 U	16 U	16 U	16 U
Aroclor-1260		16 U	16 U	16 U	102 %	96 %	16 U

Cust ID:		B16W83	B16W90	PBLKTS	PBLKTS BS
Sample Information	RPW#:	005	006	03LE0576-MB1	03LE0576-MB1
	Matrix:	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Decachlorobiphenyl	120 %	100 %	105 %	100 %
	Tetrachloro-m-xylene	120 * %	90 %	85 %	85 %
=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====					
Aroclor-1016		16 U	16 U	15 U	92 %
Aroclor-1221		16 U	16 U	15 U	15 U
Aroclor-1232		16 U	16 U	15 U	15 U
Aroclor-1242		16 U	16 U	15 U	15 U
Aroclor-1248		16 U	16 U	15 U	15 U
Aroclor-1254		16 U	16 U	15 U	15 U
Aroclor-1260		16 U	16 U	15 U	94 %

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.
 %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS[illegible]

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-62		Page 1 of 1		
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (12.5'-15')				SAF No. F03-006		Air Quality <input type="checkbox"/>			
Ice Chest No. ERC 96 05F		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To RECRA EDERLINE SERVICES (Formerly TMA) 4/22/03		Offsite Property No. A030220				Bill of Lading/Air Bill No. SEE OSPL					
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None		
				Type of Container	aG	aG	aG	aG	aG		
				No. of Container(s)	1	1	1	1	1		
				Volume	120mL	60mL	120mL	60mL	60mL		
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions. 4/22/03	Tritium - H3			
Sample No.	Matrix *	Sample Date	Sample Time								
B16W79	SOIL	4/28/03	1350	X	X	X					
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS 4/22/03			
Relinquished By/Removed From Greg Hulstrom 4/22/03		Date/Time 1645		Received By/Stored In REF 1A 3728		Date/Time 42803		<p>4/22/03</p> <p>** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis.</p> <p>(1) Technetium-99, Strontium-89/90 - Total Sr, Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237</p> <p>Personnel not available to relinquish samples from the 3728 Ref # 1A on 511103</p>			
Relinquished By/Removed From REF 1A 3728		Date/Time 5103		Received By/Stored In SJGALE		Date/Time 1100					
Relinquished By/Removed From SJGALE		Date/Time 5103		Received By/Stored In FED EX		Date/Time 1100					
Relinquished By/Removed From 5103		Date/Time 0945		Received By/Stored In 5103		Date/Time 0945					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
LABORATORY SECTION				Received By				Title			
FINAL SAMPLE DISPOSITION				Disposal Method				Disposed By			

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-63		Page 1 of 1				
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days			
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (17.5'-20')				SAF No. F03-006		Air Quality <input type="checkbox"/>					
Ice Chest No. ERC 96 056		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express							
Shipped To RELPA EBERLINE SERVICES (Formerly TMA) 4/22/03		Offsite Property No. A030220				Bill of Lading/Air Bill No. SOE 03PC							
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage		Preservation		Cool 4C	Cool 4C	Cool 4C	None	None					
		Type of Container		aG	aG	aG	aG	aG					
		No. of Container(s)		1	1	1	1	1					
		Volume		120mL	60mL	120mL	60mL	60mL					
		SAMPLE ANALYSIS		Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions Ag 4/22/03	Tritium - H3					
Sample No.	Matrix *	Sample Date	Sample Time										
B16W80	SOIL	4/28/03	1510	X	X	X							
CHAIN OF POSSESSION		Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *			
Relinquished By/Removed From <i>Greg Thomas</i> 4/22/03		Date/Time 1645		Received By/Stored In <i>REF 1A 3728</i> 4/28/03		Date/Time 1645		** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. (1) Technetium-99; Strontium-89/90 - Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237 Personnel not available to relinquish samples from the 3728 Ref # 1A on 2/1/03				S=Soil SE=Soilment SO=Solid SI=Sludge W = Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Time WL=Wipe L=Liquid V=Vegetation X=Other	
Relinquished By/Removed From <i>REF 1A 3728</i> 5/1/03		Date/Time 1100		Received By/Stored In <i>SJGALE</i> 5/1/03		Date/Time 1100							
Relinquished By/Removed From <i>SJGALE</i> 5/1/03		Date/Time 1100		Received By/Stored In FED EX		Date/Time							
Relinquished By/Removed From <i>9/20/03</i> 5-2-03		Date/Time 0945		Received By/Stored In <i>2/1/03</i> 5-2-03		Date/Time 0945							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
LABORATORY SECTION		Received By				Title				Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method				Disposed By				Date/Time			

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-64		Page 1 of 1		
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (27.5'-30')		SAF No. F03-006		Air Quality <input type="checkbox"/>					
Ice Chest No. ERC 96 056		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To BERLINE SERVICES (Formerly TMA) RECRA <i>4/22/03</i>		Offsite Property No. A030220		Bill of Lading/Air Bill No. 30E 037C							
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None		
				Type of Container	aG	aG	aG	aG	aG		
				No. of Container(s)	1	1	1	1	1		
				Volume	120mL	60mL	120mL	60mL	60mL		
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions. <i>1/24 4/22/03</i>	Tritium - H3			
											TICTO
Sample No.	Matrix *	Sample Date	Sample Time								
B16W81	SOIL	4/29/03	0745	X	X	X	✓				B16W81 (W/SLE)
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS <i>1/24 4/22/03</i>			
Relinquished By/Removed From <i>1/24 4/29/03 1400</i>		Date/Time		Received By/Stored In <i>RECRA</i>		Date/Time		<p>** The laboratory is to achieve a detection limit of 30.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis.</p> <p>(1) Technetium-99, Strontium-89,90 - Total Sr, Isotopic Thorium (Thorium-232), Carbon-14, Iodine-129, Nickel-63, Neptunium-237. <i>1/24 4/22/03</i></p> <p>Personnel not available to relinquish samples from the 3728 Ref # 1B on 5/11/03</p>			
Relinquished By/Removed From <i>RECRA 2.2.116 4/29/03</i>		Date/Time		Received By/Stored In <i>1B 3728 4/29/03</i>		Date/Time					
Relinquished By/Removed From <i>1B 3728 5/10/03 1100</i>		Date/Time		Received By/Stored In <i>SJGALC 5/10/03 1100</i>		Date/Time					
Relinquished By/Removed From <i>SJGALC 5/10/03 1100</i>		Date/Time		Received By/Stored In <i>FED EX</i>		Date/Time					
Relinquished By/Removed From <i>1/24 5.2.03 0945</i>		Date/Time		Received By/Stored In <i>1/24 5.2.03 0945</i>		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
LABORATORY SECTION		Received By		Title				Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time			

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-65		Page 1 of 1			
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days		
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (37.5'-40')		SAF No. F03-006		Air Quality <input type="checkbox"/>						
Ice Chest No. ERC 96 055		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express						
Shipped To REERA 1st EBERLINE SERVICES (Formerly TMA) 4/22/03		Offsite Property No. A030220				Bill of Lading/Air Bill No. 565 05PC						
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None			
				Type of Container	aG	aG	aG	aG	aG			
				No. of Container(s)	1	1	1	1	1			
				Volume	120mL	60mL	120mL	60mL	60mL			
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions.	Tridium - H3				
Sample No.	Matrix *	Sample Date	Sample Time									
B16W82	SOIL	4/29/03	0900	X	X	X					B16W48 (W5CF)	
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>**The laboratory is to achieve a detection limit of 30.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis.</p> <p>(4) Technetium-99, Strontium-89,90 - Total Sr, Isotopic Thorium (Thorium-232), Carbon-14, Iodine-129, Nickel-63, Neptunium-237</p> <p>Personnel not available to relinquish samples from the 3728 Ref # 10 on 5.11.03</p>				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		Matrix *				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		S=Soil SB=Sediment SO=Solid SL=Sludge W = Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Trace W1=Wipe L=Liquid V=Vegetation X=Other				
LABORATORY SECTION		Received By		Title		Date/Time						
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time						

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-006-66		Page 1 of 1	
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (47.5'-50')		SAF No. F03-006		Air Quality <input type="checkbox"/>			
Ice Chest No. ERC 96 056		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express			
Shipped To NERA EBERLINE SERVICES (Formerly TMA) <i>4/14/03</i>		Offsite Property No. A030220				Bill of Lading/Air Bill No. SEE OSPC			
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage		Preservation	Cool 4C	Cool 4C	Cool 4C	None	None		
		Type of Container	aG	aG	aG	aG	aG		
		No. of Container(s)	1	1	1	1	1		
		Volume	120mL	60mL	120mL	60mL	60mL		
SAMPLE ANALYSIS		Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions	Tritium - H3			
Sample No.	Matrix *	Sample Date	Sample Time						
B16W83	SOIL	4/29/03	1020	X	X	X			B16W83 (W5CF)
CHAIN OF POSSESSION		Sign/Print Names				SPECIAL INSTRUCTIONS			
Relinquished By/Removed From <i>M. Hulstrom</i> 4/29/03 1400		Received By/Stored In <i>RF. Hulstrom</i> 4/29/03 1400		Date/Time		** The laboratory is to achieve a detection limit of 10.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. (1) Technetium-99; Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237 <i>9/22/03</i>			
Relinquished By/Removed From <i>R. F. Hulstrom</i> 4/29/03		Received By/Stored In <i>IB 3728</i> 4/29/03		Date/Time					
Relinquished By/Removed From <i>IB 3728</i> 5/03 1100		Received By/Stored In <i>SJ GALE</i> 5/03 1100		Date/Time					
Relinquished By/Removed From <i>SJ GALE</i> 5/03 1100		Received By/Stored In <i>FED EX</i>		Date/Time					
Relinquished By/Removed From <i>9/22/03</i> 5/2/03 0945		Received By/Stored In <i>Smith</i> 5/2/03 0945		Date/Time					
Relinquished By/Removed From		Received By/Stored In		Date/Time		Personnel not available to relinquish samples from the 3728 Ref # <i>1B</i> on <i>5/11/03</i>			
LABORATORY SECTION		Received By		Title		Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time			

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-73		Page 1 of 1			
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days		
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (17.5°-20°)				SAF No. F03-006		Air Quality <input type="checkbox"/>				
Ice Chest No. ERC 96 056		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express						
Shipped To RECRA EDERLINE SERVICES (Formerly TMA) 4/22/03		Offsite Property No. A030220				Bill of Lading/Air Bill No. 58E 03PC						
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None			
				Type of Container	aG	aG	aG	aG	aG			
				No. of Container(s)	1	1	1	1	1			
				Volume	120mL	60mL	120mL	60mL	60mL			
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions 952 4/22/03	Tritium - H3				
Sample No.	Matrix *	Sample Date	Sample Time									
B16W90	SOIL	4/28/03	1510	X	X	X						
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>952 4/22/03</p> <p>** The laboratory is to achieve a detection limit of 50.0 PCU/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis.</p> <p>(1) Technetium-99, Strontium-89,90 - Total Sr, Isotopic Thorium (Thorium-232), Carbon-14, Iodine-129, Nickel-63, Neptunium-237 952 4/22/03</p> <p>Personnel not available to relinquish samples from the 3728 Ref # 1A on 5/1/03</p>				
Greg Johansen		4/28/03		REF 1A 3728		4/28/03 1645						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
REF 1A 3728		5/1/03 1100		5/1/03 1100		5/1/03 1100						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
5/1/03 1100		5/1/03 1100		FED EX		5/1/03 1100						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>Matrix *</p> <p>S=Soil SE=Seawater SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other</p>				
5/2/03 0915		5/2/03 0915		5/2/03 0915		5/2/03 0915						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
5/2/03 0915		5/2/03 0915		5/2/03 0915		5/2/03 0915						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
5/2/03 0915		5/2/03 0915		5/2/03 0915		5/2/03 0915						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
5/2/03 0915		5/2/03 0915		5/2/03 0915		5/2/03 0915						
LABORATORY SECTION		Received By		Title				Date/Time				
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time				

LIONVILLE LABORATORY INCORPORATED

SAMPLE RECEIPT CHECKLIST

CLIENT: TNU Hamford

Purchase Order/Project:

DATE: 5-2-03

AF# / SOW# / Release #: F03-006

Laboratory SDG #:

0305L329

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

- | | | | | |
|--|---|-----------------------------|---|--|
| 1. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 2. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 3. Airbill # recorded? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 5. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 7. All samples on coc received? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 8. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 10. Shipment meets LVLJ Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 11. Where applicable, bar code labels are affixed to coc? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 12. coc signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 13. coc will be faxed or emailed to client? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 14. Project Manager/Client contacted concerning discrepancies? (name/date) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |

Cooler # / temp (°C) and Comments:

EEC 96-056 / 1.3°C

Laboratory Sample Custodian:

Laboratory Project Manager:

[Signature]

15

Lionville Laboratory, Inc.
GRO ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2194

DATE RECEIVED: 05/02/03

LVL LOT # :0305L329

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B16W79	001	S	03LVJ515	04/28/03	N/A	06/15/03
B16W80	002	S	03LVJ515	04/28/03	N/A	06/15/03
B16W81	003	S	03LVJ515	04/29/03	N/A	06/15/03
B16W82	004	S	03LVJ515	04/29/03	N/A	06/15/03
B16W82	004 MS	S	03LVJ515	04/29/03	N/A	06/15/03
B16W82	004 MSD	S	03LVJ515	04/29/03	N/A	06/15/03
B16W83	005	S	03LVJ515	04/29/03	N/A	06/15/03
B16W90	006	S	03LVJ515	04/28/03	N/A	06/15/03

LAB QC:

TBLKIZ	MB1	S	03LVJ515	N/A	N/A	06/15/03
TBLKIZ	MB1 BS	S	03LVJ515	N/A	N/A	06/15/03



Handwritten signature/initials



Analytical Report

Client: TNU-HANFORD F03-006
LVL #: 0305L329
SDG/SAF # H2194/F03-006

W.O. #: 11343-606-001-9999-00
Date Received: 05-02-2003

GRO

Six (6) soil samples were collected on 04-28,29-2003.

The samples and their associated QC samples were analyzed according to Lionville Laboratory OPs based on SW-846 method 8015 for Gasoline Range Organics (GRO) on 06-15-2003. The analysis met the intent of method WTPH-G.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from samples that met LVL's sample acceptance policy.
2. Samples were analyzed outside of holding time. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
3. The method blank was below the reporting limits for all target compounds.
4. All surrogate recoveries were within acceptance criteria.
5. The blank spike recovery was within acceptance criteria.
6. The matrix spike recoveries were within acceptance criteria.
7. All initial calibrations associated with this data set were within acceptance criteria.
8. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
9. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.


Iain Daniels

Laboratory Manager

Lionville Laboratory Incorporated

6/19/03
Date

son\group\data\gro\tnu-hanford\0305-329.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 15 pages.

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 0360212

Initiator: John Lach
Date: 6/18/07
Client: TW

Batch: 03052325
Samples: All
Method: SW846/MCAWW/CLP/

Parameter: 0620
Matrix: Soil
Prep Batch: 0360255

1. Reason for SDR

a. COC Discrepancy ☐ Tech Profile Error ☐ Client Request ☐ Sampler Error on C-O-C
☐ Transcription Error ☐ Wrong Test Code ☐ Other

b. General Discrepancy

☐ Missing Sample/Extract ☐ Container Broken ☐ Wrong Sample Pulled ☐ Label ID's Illegible
☐ Hold Time Exceeded ☐ Insufficient Sample ☐ Preservation Wrong ☐ Received Past Hold
☐ Improper Bottle Type ☐ Not Amenable to Analysis

Note: Verified by [Log-In] or [Prep Group] (circle)...signature/date: _____

c. Problem (Include all relevant specific results; attach data if necessary)

Sample extracted 3 Days Past hold.

2. Known or Probable Causes(s)

3. Discussion and Proposed Action

Other Description:

☐ Re-log
☐ Entire Batch
☐ Following Samples: _____
☐ Re-leach
☐ Re-extract
☐ Re-digest
☐ Revise EDD
☐ Change Test Code to _____
☐ Place On/Take Off Hold (circle)

Narrative

4. Project Manager Instructions...signature/date:

☒ Concur with Proposed Action
☐ Disagree with Proposed Action; See Instruction
☐ Include in Case Narrative
☐ Client Contacted:
Date/Person _____
☐ Add
☐ Cancel

5. Final Action...signature/date:

Other Explanation:

☒ Verified re-[log][leach][extract][digest][analysis] (circle)
☐ Included in Case Narrative
☐ Hard Copy COC Revised
☐ Electronic COC Revised
☐ EDD Corrections Completed

When Final Action has been recorded, forward original to QA Specialist for distribution and filing.

Route Distribution of Completed SDR
☒ X Initiator
☒ X Lab General Manager: M. Taylor
☒ X Project Mgr. Stone/Johnson/Haslett
☒ X Technical Mgr. Wesson/Daniels
☒ X QA (file)
☐ Data Management: Feldman
☐ Sample Prep: Beegle/Kiger

Route Distribution of Completed SDR
☐ Metals: Beegle
☐ Inorganic: Perrone
☐ GC/LC: Kiger
☐ MS: Rychlak/Layman
☐ Log-in: Melnic
☐ Admin: Soos
☐ Other: _____



GLOSSARY OF GASOLINE RANGE ORGANICS DATA

DATA QUALIFIERS

- U** = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J** = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B** = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E** = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I** = Interference.

ABBREVIATIONS

- BS** = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD** = Indicates blank spike duplicate.
- MS** = Indicates matrix spike.
- MSD** = Indicates matrix spike duplicate.
- DL** = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA** = Not Applicable.
- DF** = Dilution Factor.
- NR** = Not Required.
- SP** = Indicates Spiked Compound.



GLOSSARY OF GASOLINE RANGE ORGANICS DATA

- D** = This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- C** = This flag applies to a compound that has been confirmed by GC/MS.

R:/SHARE/GCVOLATILE/GCVOLATILEGLOS.DOC

Lionville Laboratory, Inc.

GAS RANGE ORGANICS

Report Date: 06/18/03 12:38

RFW Batch Number: 0305L329

Client: TNUHANFORD F03-006 H2194 Work Order: 11343606001 Page: 1

	Cust ID:	B16W79	B16W80	B16W81	B16W82	B16W82	B16W82
Sample Information	RFW#:	001	002	003	004	004 MS	004 MSD
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
	Fluorobenzene	79 %	74 %	81 %	82 %	79 %	78 %
		fl	fl	fl	fl	fl	fl
Gasoline Range Organics (GRO)		33 U	30 U	30 U	33 U	93 %	104 %

	Cust ID:	B16W83	B16W90	TBLKIZ	TBLKIZ BS
Sample Information	RFW#:	005	006	03LVJ515-MB1	03LVJ515-MB1
	Matrix:	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG
	Fluorobenzene	82 %	78 %	94 %	96 %
		fl	fl	fl	fl
Gasoline Range Organics (GRO)		30 U	33 U	30 U	106 %

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.
 %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

0305L329

Client <u>Tou-Hanford F03-0006</u>						Refrigerator #				2 2		2 2 2					
Est. Final Proj. Sampling Date						#/Type Container	Liquid										
Project # <u>11343-C006-001-9999.00</u>							Solid		1AG	1AG		1AG	1AG				
Project Contact/Phone #						Volume	Liquid										
Lionville Laboratory Project Manager <u>OJ</u>							Solid		100	850		120	120				
QC Spec Del Std TAT <u>30 day</u>						Preservatives		-	-			-	-				
Date Rec'd <u>5-2-03</u> Date Due <u>6-16-03</u>						ANALYSES REQUESTED →		ORGANIC			INORG						
						VOA	BNA	Pest/PCB	Herb		Metal	CN					
						↓ Lionville Laboratory Use Only ↓											
								H	X			TCR	IND	IOGR			
MATRIX CODES: S - Soil SE - Sediment SO - Solid SL - Sludge W - Water O - Oil A - Air DS - Drum DL - Drum L - EP/TCLP WI - Wipe X - Other F - Fish						Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS MSD	Matrix	Date Collected	Time Collected						
						001	BKOW79		S	4-28-03	1350				✓	✓	✓
						002	80		I	1	1510				✓	✓	✓
						003	81		I	4-29-03	0745				✓	✓	✓
						004	82		I	1	0900				✓	✓	✓
						005	83		I	1	1020				✓	✓	✓
						006	90		I	4-28-03	1510				✓	✓	✓
						007	91		I	1	1130			✓	✓		
Special Instructions: <u>Run Matrix QC</u>						DATE/REVISIONS:						Lionville Laboratory Use Only					
<u>Saf # F03006</u>						<u>5-14-03</u> 1. <u>Per Client: Due Date = 6-16-03</u>						Samples were ✓ or Hand Delivered _____ Airbill # <u>See below</u> 2) Ambient or <u>Chilled</u> 3) Received in Good Condition (Y) or N 4) Samples Properly Preserved (Y) or N 5) Received Within Holding Times (Y) or N					
						Samples <u>2001 → -006 Add Ag, As, B, Be, Bi, Cd, Cr, Cu,</u> <u>Hg, Ni, Pb, Sb, Se / IC: Cl, Fl, NO₂, NO_x, PH₃,</u> <u>INH₃N, ICH₃, IPH, O6Z4H, O6Z5X, O6ESC,</u> <u>OPCB, ODAS, OGRA</u>						Tamper Resistant Seal was: 1) Present on Outer Package (Y) or N 2) Unbroken on Outer Package (Y) or N 3) Present on Sample (Y) or N 4) Unbroken on Sample (Y) or N COC Record Present Upon Sample Rec't (Y) or N Cooler Temp. <u>1.3 °C</u>					
						6. _____						Discrepancies Between Samples Labels and COC Record? Y or (N) NOTES: <u>7915 8463 3221</u>					
Relinquished by		Received by		Date	Time	Relinquished by		Received by		Date	Time						
<u>FedEx</u>		<u>DJ Smith</u>		<u>5-2-03</u>	<u>0945</u>	<u>ORIGINAL</u>		<u>COMPOSITE</u>									
						<u>REWRITTEN</u>		<u>WASTE</u>									

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-63		Page 1 of 1					
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days				
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (17.5'-20')		SAF No. F03-006		Air Quality <input type="checkbox"/>								
Ice Chest No. ERC 96 056		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express								
Shipped To EDERLINE SERVICES (Formerly TMA) RELPA <i>4/22/03</i>		Offsite Property No. A030220		Bill of Lading/Air Bill No. 50E 059C										
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation		Cool 4C	Cool 4C	Cool 4C	None	None				
				Type of Container		aG	aG	aG	aG	aG				
				No. of Container(s)		1	1	1	1	1				
				Volume		120mL	60mL	120mL	60mL	60mL				
SAMPLE ANALYSIS				Chromium Hex - 7196		NO2/NO3 - 353.2		Oil & Grease - 413.1		See item (1) in Special Instructions <i>AGM 4/22/03</i>		Tritium - H3		
Sample No.		Matrix *		Sample Date		Sample Time								
B16W80		SOIL		4/28/03		1510		X X X /						
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p><i>189 4/22/03</i></p> <p>** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis.</p> <p>(1) Technetium-99; Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237</p> <p><i>782 4/22/03</i></p> <p>Personnel not available to relinquish samples from the 3728 Ref # 1A on 5/1/03</p>						
<i>Greg Thomas</i>		<i>4/22/03</i>		REF 1A 3728		<i>4/28/03 1645</i>								
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time								
REF 1A 3728		<i>5/1/03 1100</i>		<i>8JGALE</i>		<i>5/1/03 1100</i>								
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time								
<i>SJGALE</i>		<i>5/1/03</i>		FED EX										
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time								
<i>9/20/03</i>		<i>5-2-03 0945</i>		<i>2/2/03</i>		<i>5-2-03 0945</i>								
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time								
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time								
LABORATORY SECTION		Received By		Title				Date/Time						
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time						

FH-Central Plateau Project			CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-64		Page 1 of 1		
Collector Johansen/Pope/Pfister			Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling			Sampling Location 216-A-37 (C4106); (27.5'-30')			SAF No. F03-006		Air Quality <input type="checkbox"/>				
Ice Chest No. ERC 96 056			Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To REIRA EREPINE SERVICES (Formerly TMA) 4/24/03			Offsite Property No. A030220			Bill of Lading/Air Bill No. 30E 057C						
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None			
				Type of Container	aG	aG	aG	aG	aG			
				No. of Container(s)	1	1	1	1	1			
				Volume	120mL	60mL	120mL	60mL	60mL			
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions	Tritium - H3				
Sample No.	Matrix *	Sample Date	Sample Time									
B16W81	SOIL	4/24/03	0745	X	X	X						B16W81 (W5LF)
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS 18c 4/22/03				Matrix * S=Soil SE=Sealment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>** The laboratory is to achieve a detection limit of 30.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis.</p> <p>(1) Technetium-99, Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237</p> <p>Personnel not available to relinquish samples from the 3728 Ref #18 on 5/1/03</p>				
XXXXXXXXXX		4/24/03 1400		XXXXXXXXXX		4/24/03 1400						
XXXXXXXXXX		1800		XXXXXXXXXX		1400						
XXXXXXXXXX		4/24/03		XXXXXXXXXX		4/24/03						
XXXXXXXXXX		1100		XXXXXXXXXX		1100						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
1B 3728		5/1/03 1100		SIGALE		5/103 1100						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
SIGALE		5/1/03 1100		FED EX								
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
2/20/03		5/2/03 0945		2/20/03		5/2/03 0945						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
LABORATORY SECTION		Received By		Title				Date/Time				
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time				

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-65		Page 1 of 1		
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (37.5'-40')		SAF No. F03-006		Air Quality <input type="checkbox"/>					
Ice Chest No. ERC 9.6 055		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To RECRA 15m ESERLINE SERVICES (Formerly TMA) 4/22/03		Offsite Property No. A030220				Bill of Lading/Air Bill No. 5685 087C					
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage		Preservation	Cool 4C	Cool 4C	Cool 4C	None	None				
		Type of Container	aG	aG	aG	aG	aG				
		No. of Container(s)	1	1	1	1	1				
		Volume	120mL	60mL	120mL	60mL	60mL				
SAMPLE ANALYSIS		Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions	Tritium - H3					
Sample No.	Matrix *	Sample Date	Sample Time								
B16W82	SOIL	4/29/03	0900	X	+	+	+				B16W48 (W5CF)
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>**The laboratory is to achieve a detection limit of 30.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis.</p> <p>(1) Technetium-99; Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237</p> <p>Personnel not available to relinquish samples from the 3728 Ref # 1B on 5/1/03</p>			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
LABORATORY SECTION		Received By		Title				Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time			

FH-Central Plateau Project				CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						F03-006-66		Page 1 of 1	
Collector Johansen/Pope/Pfister				Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling				Sampling Location 216-A-37 (C4106); (47.5'-50')				SAF No. F03-006		Air Quality <input type="checkbox"/>			
Ice Chest No. ERC 96 056				Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To NEURA EBERLINE SERVICES (Formerly TMA) <i>per 4/14/03</i>				Offsite Property No. A030220				Bill of Lading/Air Bill No. SEE OSPC					
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None				
				Type of Container	aG	aG	aG	aG	aG				
				No. of Container(s)	1	1	1	1	1				
				Volume	120mL	60mL	120mL	60mL	60mL				
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions <i>per 4/12/03</i>	Tritium - H3					
Sample No.	Matrix *	Sample Date	Sample Time										
B16W83	SOIL	4/24/03	1020	X	X	X							B16W83 (W5CF)
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS					
Relinquished By/Removed From <i>per 4/24/03</i>				Received By/Stored In <i>per 4/24/03</i>				<p><i>per 4/22/03</i></p> <p>** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis.</p> <p>(1) Technetium-99; Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237</p> <p><i>per 4/22/03</i></p> <p>Personnel not available to relinquish samples from the 3728 Ref # 1B on 5/11/03</p>					
Relinquished By/Removed From <i>per 4/29/03</i>				Received By/Stored In <i>per 4/29/03</i>									
Relinquished By/Removed From <i>per 5/03/03</i>				Received By/Stored In <i>per 5/03/03</i>									
Relinquished By/Removed From <i>per 5/03/03</i>				Received By/Stored In <i>per 5/03/03</i>									
Relinquished By/Removed From <i>per 5/2/03</i>				Received By/Stored In <i>per 5/2/03</i>									
Relinquished By/Removed From <i>per 5/2/03</i>				Received By/Stored In <i>per 5/2/03</i>									
LABORATORY SECTION		Received By		Title				Date/Time					
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time					

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-73		Page 1 of 1		
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (17.5'-20')		SAF No. F03-006		Air Quality <input type="checkbox"/>					
Ice Chest No. ERC 96 056		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To RECRA BERLINE SERVICES (Formerly TMA) 4/22/03		Offsite Property No. A030220				Bill of Lading/Air Bill No. 505 03 P C					
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None		
				Type of Container	aG	aG	aG	aG	aG		
				No. of Container(s)	1	1	1	1	1		
				Volume	120mL	60mL	120mL	60mL	60mL		
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions ASAC 4/22/03	Tritium - H3			
Sample No.	Matrix *	Sample Date	Sample Time								
B16W90	SOIL	4/28/03	1510	X	X	X					
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		952 4/22/03 ** The laboratory is to achieve a detection limit of 30.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. (1) Technetium-99, Strontium-89,90 - Total Sr, Isotopic Thorium (Thorium-232), Carbon-14, Iodine-129, Nickel-63, Neptunium-237 952 4/22/03 Personnel not available to relinquish samples from the 3728 Ref # <u>1A</u> on <u>511103</u>			
<i>Greg Thomas</i>		1645		REF 1A 3728		42803 1645					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
REF 1A 3728		5103 1100		SUGALC		5103 1100					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
<i>SUGALC</i>		5103 1100		FED EX							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
<i>Ed E</i>		5-2-03 0915		<i>Ed E</i>		5-2-03 0945					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
LABORATORY SECTION		Received By		Title				Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time			

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-000-14	
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (0.5')		SAF No. F03-006		Price Code 8N Air Quality <input type="checkbox"/>	
Ice Chest No. ERC 96 056		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express	
Shipped To AD5103 RECRA EDERLINE SERVICES (Formerly TMA)		Offsite Property No. A030220		Bill of Lading/Air Bill No. SEE 05PC			
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	
				Type of Container	aG	aG	
				No. of Container(s)	1	1	
				Volume	60mL	250mL	
SAMPLE ANALYSIS				Pesticides - 8081	Chloro- Herbicides - EPA8151		
Sample No.	Matrix *	Sample Date	Sample Time				
B16W91	SOIL	4/26/03	1130	X	X		
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS			
Relinquished By/Removed From <i>Greg Thomas</i>		Date/Time 4/28/03		Received By/Stored In REF 1A 3728		Date/Time 4/28/03 1645	
Relinquished By/Removed From REF 1A 3728		Date/Time 5103 1100		Received By/Stored In SDGALV/Ad		Date/Time 5103 1100	
Relinquished By/Removed From <i>SDGALV/Ad</i>		Date/Time 5103 1100		Received By/Stored In FED EX		Date/Time	
Relinquished By/Removed From <i>Had Ex</i>		Date/Time 5-2-03 0545		Received By/Stored In <i>SDGALV/Ad</i>		Date/Time 5-2-03 0545	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time	
LABORATORY SECTION				Title			
Received By				Date/Time			
FINAL SAMPLE DISPOSITION				Disposed By			
Disposal Method				Date/Time			

Matrix *
 S=Soil
 SE=Sediment
 SO=Solid
 SL=Sludge
 W = Water
 O=Oil
 A=Air
 DS=Dry Solid
 DL=Dry Liquid
 T=Tissue
 WI=Wipe
 L=Liquid
 V=Vegetation
 X=Other

Personnel not available to
 relinquish samples from the 3728
 Ref # 1A on 5/1/03

LIONVILLE LABORATORY INCORPORATED

SAMPLE RECEIPT CHECKLIST

CLIENT: TNU Hamford

Purchase Order/Project:

DATE: 5-2-03

AF# / SOW# / Release #: F03-006

Laboratory SDG #:

0305L329

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

- | | | | | |
|--|---|-----------------------------|---|--|
| 1. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 2. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 3. Airbill # recorded? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 5. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 7. All samples on coc received? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 8. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 10. Shipment meets Lvl1 Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 11. Where applicable, bar code labels are affixed to coc? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 12. coc signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 13. coc will be faxed or emailed to client? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 14. Project Manager/Client contacted concerning discrepancies? (name/date) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |

Cooler # / temp (°C) and Comments:

EEC 96-056 / 1.3°

Laboratory Sample Custodian:

Laboratory Project Manager:

[Signature]

15

Lionville Laboratory, Inc.
DRO ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2194

DATE RECEIVED: 05/02/03

LVL LOT # :0305L329

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B16W79	001	S	03LE0577	04/28/03	05/14/03	05/16/03
B16W80	002	S	03LE0577	04/28/03	05/14/03	05/16/03
B16W81	003	S	03LE0577	04/29/03	05/14/03	05/16/03
B16W82	004	S	03LE0577	04/29/03	05/14/03	05/16/03
B16W82	004 MS	S	03LE0577	04/29/03	05/14/03	05/16/03
B16W82	004 MSD	S	03LE0577	04/29/03	05/14/03	05/16/03
B16W83	005	S	03LE0583	04/29/03	05/15/03	05/19/03
B16W90	006	S	03LE0577	04/28/03	05/14/03	05/16/03

LAB QC:

BLK	MB1	S	03LE0577	N/A	05/14/03	05/19/03
BLK	MB1 BS	S	03LE0577	N/A	05/14/03	05/19/03
BLK	MB1	S	03LE0583	N/A	05/15/03	05/20/03
BLK	MB1 BS	S	03LE0583	N/A	05/15/03	05/20/03



For 6/15/03



Analytical Report

Client: TNU-HANFORD F03-006
LVL #: 0305L329
SDG/SAF # H2194/F03-006

W.O. #: 11343-606-001-9999-00
Date Received: 05-02-2003

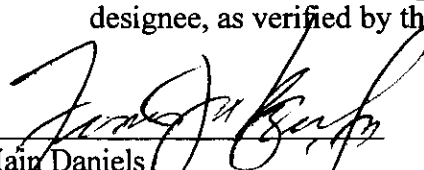
DIESEL RANGE ORGANICS

Six (6) soil samples were collected on 04-28,29-2003.

The samples and their associated QC samples were extracted on 05-14,15-2003 and analyzed according to Lionville Laboratory OPs based on SW846, 3rd Edition procedures on 05-16,19,20-2003. The extraction procedure was based on method 3540 and the extracts were analyzed based on method 8015B. The analysis met the intent of method WTPH-D.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
2. Samples were extracted outside of holding time. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
3. The method blanks were below the reporting limits for all target compounds.
4. All surrogate recoveries were within acceptance criteria.
5. The blank spike recoveries were within acceptance criteria.
6. The matrix spike recoveries were within acceptance criteria.
7. All initial calibrations associated with this data set were within acceptance criteria.
8. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
9. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.


Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated


Date

son\tr\group\data\dto\tnu hanford\0305-329.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 15 pages.

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 0360271
03052224

Initiator: John Lee
Date: 6/18/03
Client: TW

Batch: 03052224
Samples: A11
Method: SWB46/MCA/WW/CLP/

Parameter: DDRO
Matrix: SO-1
Prep Batch: 03LE577,587

1. Reason for SDR

a. COC Discrepancy ☐ Tech Profile Error ☐ Client Request ☐ Sampler Error on C-O-C
☐ Transcription Error ☐ Wrong Test Code ☐ Other _____

b. General Discrepancy

☐ Missing Sample/Extract ☐ Container Broken ☐ Wrong Sample Pulled ☐ Label ID's Illegible
☐ Hold Time Exceeded ☐ Insufficient Sample ☐ Preservation Wrong ☐ Received Past Hold
☐ Improper Bottle Type ☐ Not Amenable to Analysis

Note: Verified by [Log-In] or [Prep Group] (circle)...signature/date: _____

c. Problem (Include all relevant specific results; attach data if necessary)

SAMPLES were extracted 2 days past hold.

2. Known or Probable Causes(s)

3. Discussion and Proposed Action

Other Description: _____

☐ Re-log
☐ Entire Batch
☐ Following Samples: _____
☐ Re-leach
☐ Re-extract
☐ Re-digest
☐ Revise EDD
☐ Change Test Code to _____
☐ Place On/Take Off Hold (circle)

None.

4. Project Manager Instructions...signature/date

☒ Concur with Proposed Action
☐ Disagree with Proposed Action; See Instruction
☐ Include in Case Narrative
☐ Client Contacted:
Date/Person _____
☐ Add
☐ Cancel

5. Final Action...signature/date

Other Explanation: _____

☒ Verified re-[log][leach][extract][digest][analysis] (circle)
☒ Included in Case Narrative
☐ Hard Copy COC Revised
☐ Electronic COC Revised
☐ EDD Corrections Completed

When Final Action has been recorded, forward original to QA Specialist for distribution and filing.

Route Distribution of Completed SDR
☒ Initiator
☒ Lab General Manager: M. Taylor
☒ Project Mgr. Stone/Johnson/Haslett
☒ Technical Mgr. Wesson/Daniels
☒ QA (file)
☐ Data Management: Feldman
☐ Sample Prep: Beegle/Kiger

Route Distribution of Completed SDR
☐ Metals: Beegle
☐ Inorganic: Perrone
☐ GC/LC: Kiger
☐ MS: Rychlak/Layman
☐ Log-in: Melnic
☐ Admin: Soos
☐ Other: _____



GLOSSARY OF DIESEL RANGE ORGANICS DATA

DATA QUALIFIERS

- U = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I = Interference.

ABBREVIATIONS

- BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD = Indicates blank spike duplicate.
- MS = Indicates matrix spike.
- MSD = Indicates matrix spike duplicate.
- DL = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA = Not Applicable.
- DF = Dilution Factor.
- NR = Not Required.
- SP = Indicates Spiked Compound.



GLOSSARY OF DIESEL RANGE ORGANICS DATA

- D** = This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- C** = This flag applies to a compound that has been confirmed by GC/MS.

Lionville Laboratory, Inc.

DIESEL RANGE ORGANICS BY GC

Report Date: 05/24/03 11:27

RFW Batch Number: 0305L329

Client: TNUHANFORD F03-006 H2194 Work Order: 11343606001 Page: 1

	Cust ID:	B16W79	B16W80	B16W81	B16W82	B16W82	B16W82
Sample	RFW#:	001	002	003	004	004 MS	004 MSD
Information	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
	p-Terphenyl	69 %	87 %	93 %	94 %	97 %	101 %
		-----fl-----	-----fl-----	-----fl-----	-----fl-----	-----fl-----	-----fl-----
Diesel Range Organics		12.8 U	12.5 U	12.5 U	12.7 U	72 %	70 %
Kerosene		12.8 U	12.5 U	12.5 U	12.7 U	12.7 U	12.7 U

	Cust ID:	B16W83	B16W90	BLK	BLK BS	BLK	BLK BS
Sample	RFW#:	005	006	03LE0577-MB1	03LE0577-MB1	03LE0583-MB1	03LE0583-MB1
Information	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
	p-Terphenyl	108 %	104 %	106 %	91 %	109 %	92 %
		-----fl-----	-----fl-----	-----fl-----	-----fl-----	-----fl-----	-----fl-----
Diesel Range Organics		12.7 U	12.5 U	12.0 U	74 %	12.0 U	74 %
Kerosene		12.7 U	12.5 U	12.0 U	12.0 U	12.0 U	12.0 U

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.
 %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

gmc/12/12

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS[illegible]

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-006-62		Page 1 of 1	
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (12.5'-15')		SAF No. F03-006		Air Quality <input type="checkbox"/>			
Ice Chest No. ERC 96 05F		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express			
Shipped To RECREATION SERVICES (Formerly TMA) <i>4/22/03</i>		Offsite Property No. A030220				Bill of Lading/Air Bill No. SEE OSL			
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None
				Type of Container	aG	aG	aG	aG	aG
				No. of Container(s)	1	1	1	1	1
				Volume	120mL	60mL	120mL	60mL	60mL
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions <i>4/22/03</i>	Tritium - H3	
Sample No.	Matrix *	Sample Date	Sample Time						
B16W79	SOIL	4/28/03	1358	X	X	X			
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS <i>4/22/03</i>	
Relinquished By/Removed From <i>Greg Thorne</i>		Date/Time 4/28/03		Received By/Stored In <i>REFIA 3728</i>		Date/Time 4/28/03		<p>** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis.</p> <p>(+) Technetium-99; Strontium-89/90 - Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237 <i>4/22/03</i></p> <p>Personnel not available to relinquish samples from the 3728 Ref # <i>1P</i> on <i>511103</i></p>	
Relinquished By/Removed From <i>REFIA 3728</i>		Date/Time 5/10/03 1100		Received By/Stored In <i>SJGALE</i>		Date/Time 5/10/03 1100			
Relinquished By/Removed From <i>SJGALE</i>		Date/Time 5/10/03 1100		Received By/Stored In <i>FED EX</i>		Date/Time			
Relinquished By/Removed From <i>6/20/03</i>		Date/Time 5-2-03 0945		Received By/Stored In <i>[Signature]</i>		Date/Time 5-2-03 0945			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
LABORATORY SECTION		Received By		Title				Date/Time	
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time	

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-63		Page 1 of 1		
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (17.5'-20')		SAF No. F03-006		Air Quality <input type="checkbox"/>					
Ice Chest No. ERC 96 056		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To EBERLINE SERVICES (Formerly TMA) RELPA <i>4/22/03</i>		Offsite Property No. A030220		Bill of Lading/Air Bill No. 50E 03PC							
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None		
				Type of Container	aG	aG	aG	aG	aG		
				No. of Container(s)	1	1	1	1	1		
				Volume	120mL	60mL	120mL	60mL	60mL		
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions <i>AGM 4/22/03</i>	Tritium - H3			
Sample No.	Matrix *	Sample Date	Sample Time								
B16W80	SOIL	4/28/03	1510	X	X	X					
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix * S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue W=Wipe L=Liquid V=Vegetation X=Other			
Relinquished By/Removed From <i>Greg Thomas 4/22/03</i>		Date/Time <i>1645</i>		Received By/Stored In <i>REF 1A 3728 42803</i>		Date/Time <i>1645</i>					
Relinquished By/Removed From <i>REF 1A 3728</i>		Date/Time <i>5103 1100</i>		Received By/Stored In <i>SJGALE</i>		Date/Time <i>5103 1100</i>					
Relinquished By/Removed From <i>SJGALE</i>		Date/Time <i>5103</i>		Received By/Stored In <i>FED EX</i>		Date/Time					
Relinquished By/Removed From <i>W. E. 5-2-03</i>		Date/Time <i>0945</i>		Received By/Stored In <i>SA/Phuon</i>		Date/Time <i>5-2-03 0945</i>					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
LABORATORY SECTION		Received By		Title				Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time			

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						F03-006-64 Page 1 of 1		
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N Data Turnaround 45 Days		
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (27.5'-30')		SAF No. F03-006		Air Quality <input type="checkbox"/>				
Ice Chest No. ERC 96056		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express				
Shipped To RECEIVED SEERLINE SERVICES (Formerly TMA) 4/22/03		Offsite Property No. A030220		Bill of Lading/Air Bill No. 30E05PC						
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None	
				Type of Container	aG	aG	aG	aG	aG	
				No. of Container(s)	1	1	1	1	1	
				Volume	120mL	60mL	120mL	60mL	60mL	
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions 4/22/03	Trinium - H3		
									TILTD	
Sample No.	Matrix *	Sample Date	Sample Time							
B16W81	SOIL	4/29/03	0745	X	X	X			BIGWAT (USCF)	
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *		
Relinquished By/Removed From Monahan 4/29/03 1400		Received By/Stored In ERC 4/29/03 1400		4/22/03 ** The laboratory is to achieve a detection limit of 30.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. (1) Technetium-99, Strontium-89,90 - Total Sr, Isotopic Thorium (Thorium-232), Carbon-14, Iodine-129, Nickel-63, Neptunium-237 4/22/03 Personnel not available to relinquish samples from the 3728 Ref # 1B on 5/1/03				S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other		
Relinquished By/Removed From RCOA 4/29/03 1400		Received By/Stored In 1B 3728 4/29/03								
Relinquished By/Removed From 1B 3728 5/1/03 1100		Received By/Stored In SJGALC 5/1/03 1100								
Relinquished By/Removed From SJGALC 5/1/03 1100		Received By/Stored In FED EX								
Relinquished By/Removed From FED EX 5/2/03 0945		Received By/Stored In 2/1/03 5/2/03 0945								
Relinquished By/Removed From		Received By/Stored In								
LABORATORY SECTION	Received By	Title						Date/Time		
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By						Date/Time		

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-65		Page 1 of 1				
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days			
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (37.5'-40')		SAF No. F03-006		Air Quality <input type="checkbox"/>							
Ice Chest No. ERC 9.6 055		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express							
Shipped To RECRA 1st EDERLINE SERVICES (Formerly TMA) 4/24/01		Offsite Property No. A030220		Bill of Lading/Air Bill No. 5625 05PC									
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation		Cool 4C	Cool 4C	Cool 4C	None	None			
				Type of Container		aG	aG	aG	aG	aG			
				No. of Container(s)		1	1	1	1	1			
				Volume		120mL	60mL	120mL	60mL	60mL			
SAMPLE ANALYSIS				Chromium Hex - 7196		NO2/NO3 - 353.2		Oil & Grease - 413.1		See item (1) in Special Instructions ASG 4/22/03		Tritium - H3	
Sample No.		Matrix *		Sample Date		Sample Time							
B16W82		SOIL		4/29/03		0900		X		X		X	
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>ASG 4/22/03</p> <p>**The laboratory is to achieve a detection limit of 30.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis.</p> <p>(+) Technetium-99; Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237 792 4/22/03</p> <p>Personnel not available to relinquish samples from the 3728 Ref # 1B on 511103</p>				<p>S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other</p>	
XXXXXXXXXXXXXXXXXXXX		4/29/03 1400		R. F. Lee R. F. Lee 4/29/03 1400									
R. F. Lee R. F. Lee		4/29/03 1400		1B 3728 4/29/03									
IB 3728 5103 1100		5103 1100		SIGALE 5103 1100									
5103 1100		5103 1100		5103 1100									
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
5103 1100		5103 1100		5103 1100		5103 1100							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
5103 1100		5103 1100		5103 1100		5103 1100							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
5103 1100		5103 1100		5103 1100		5103 1100							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
5103 1100		5103 1100		5103 1100		5103 1100							
LABORATORY SECTION		Received By		Title		Date/Time							
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time							

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-66		Page 1 of 1		
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (47.5'-50')				SAF No. F03-006		Air Quality <input type="checkbox"/>			
Ice Chest No. ERC 96 056		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To REURA EBERLINE SERVICES (Formerly TMA) <i>9/1/03</i>		Offsite Property No. A030220				Bill of Lading/Air Bill No. SEE OSC					
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None		
				Type of Container	aG	aG	aG	aG	aG		
				No. of Container(s)	1	1	1	1	1		
				Volume	120mL	60mL	120mL	60mL	60mL		
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions <i>9/1/03</i>	Tritium - H3			
Sample No.	Matrix *	Sample Date	Sample Time								
B16W83	SOIL	4/29/03	1020	X	X	X					B16W83 (WJSCF)
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p><i>9/1/03</i></p> <p>** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis.</p> <p>(1) Technetium-99; Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237</p> <p><i>9/1/03</i></p> <p>Personnel not available to relinquish samples from the 3728 Ref # 18 on 5/1/03</p>			
<i>REURA</i>		4/29/03 1100		<i>REURA</i>		4/29/03 1100					
<i>R. F. GALE</i>		4/29/03		<i>IB</i>		4/29/03					
<i>IB</i>		5/03 1100		<i>SJ GALE</i>		5/03 1100					
<i>SJ GALE</i>		5/03 1100		<i>FED EX</i>							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>Matrix *</p> <p>S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Dry Solids DL=Dry Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other</p>			
<i>IB</i>		5/03 0945		<i>IB</i>		5/03 0945					
<i>IB</i>		5/03 0945		<i>IB</i>		5/03 0945					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
<i>IB</i>		5/03 0945		<i>IB</i>		5/03 0945					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
<i>IB</i>		5/03 0945		<i>IB</i>		5/03 0945					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
<i>IB</i>		5/03 0945		<i>IB</i>		5/03 0945					
LABORATORY SECTION		Received By		Title				Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time			

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-006-73		Page 1 of 1	
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (17.5'-20')		SAF No. F03-006		Air Quality <input type="checkbox"/>			
Ice Chest No. ERC 96 05C		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express			
Shipped To REPA BERLINE SERVICES (Formerly TMA) 4/22/03		Offsite Property No. A030220		Bill of Lading/Air Bill No. 505 03PC					
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None
				Type of Container	aG	aG	aG	aG	aG
				No. of Container(s)	1	1	1	1	1
				Volume	120mL	60mL	120mL	60mL	60mL
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions 4/22/03	Tritium - H3	
Sample No.	Matrix *	Sample Date	Sample Time						
B16W90	SOIL	4/28/03	1510	X	X	X			
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS	
Relinquished By/Removed From <i>Greg Johansen</i>		Date/Time 4/25/03		Received By/Stored In <i>REF 1A 3728</i>		Date/Time 4/28/03		** The laboratory is to achieve a detection limit of 30.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. (1) Technetium-99, Strontium-89,90 - Total Sr, Isotopic Thorium (Thorium-232), Carbon-14, Iodine-129, Nickel-63, Neptunium-237 4/22/03 Personnel not available to relinquish samples from the 3728 Ref # <u>1A</u> on <u>5/1/03</u>	
Relinquished By/Removed From <i>REF 1A 3728</i>		Date/Time 5/1/03 1100		Received By/Stored In <i>SJGALC/D/KH</i>		Date/Time 5/1/03 1100			
Relinquished By/Removed From <i>SJGALC/D/KH</i>		Date/Time 5/1/03 1100		Received By/Stored In <i>FED EX</i>		Date/Time			
Relinquished By/Removed From <i>Ed E</i>		Date/Time 5-2-03 0945		Received By/Stored In <i>Ed E</i>		Date/Time 5-2-03 0945			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
LABORATORY SECTION		Received By		Title				Date/Time	
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time	

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				FUS-000-14	
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (0.5')		SAF No. F03-006		Price Code 8N Data Turnaround 45 Days	
Ice Chest No. ERC 96 056		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express	
Shipped To AP 5103 RECRA ESERLINE SERVICES (Formerly TMA)		Offsite Property No. A030 220		Bill of Lading/Air Bill No. SEE OSPC			
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	
				Type of Container	aG	aG	
				No. of Container(s)	1	1	
				Volume	60mL	250mL	
SAMPLE ANALYSIS				Pesticides - 8081	Chloro- Herbicides - EPA8151		
Sample No.	Matrix *	Sample Date	Sample Time				
B16W91	SOIL	4/26/03	1130	X	X		
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS		Matrix *	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time	
<i>Greg Thomas</i>		4/26/03		REF 1A 3728		4/26/03 1645	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time	
REF 1A 3728		5103 1100		SDGALV/DEL		5103 1100	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time	
SDGALV/DEL		5103 1100		FED EX			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time	
Mad Ex		5-2-03 0945		D/MER		5-2-03 0945	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time	
LABORATORY SECTION				Received By			
FINAL SAMPLE DISPOSITION				Disposal Method			
				Disposed By			
				Date/Time			

Personnel not available to
relinquish samples from the 3728
Ref # 1A on 5/1/03

LIONVILLE LABORATORY INCORPORATED

SAMPLE RECEIPT CHECKLIST

CLIENT: TNU Hamford

Purchase Order/Project:

DATE: 5-2-03

AF# / SOW# / Release #: F03-006

Laboratory SDG #:

0305L329

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

- | | | | | |
|--|---|-----------------------------|---|--|
| 1. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 2. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 3. Airbill # recorded? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 5. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 7. All samples on coc received? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 8. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 10. Shipment meets Lvl1 Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 11. Where applicable, bar code labels are affixed to coc? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 12. coc signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 13. coc will be faxed or emailed to client? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 14. Project Manager/Client contacted concerning discrepancies? (name/date) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |

Cooler # / temp (°C) and Comments:

EEC 96-056 / 1.3°C

Laboratory Sample Custodian:

Laboratory Project Manager:

[Signature]

15

Lionville Laboratory, Inc.
GCSC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2194

DATE RECEIVED: 05/02/03

LVL LOT # :0305L329

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B16W79	001	S	03LE0578	04/28/03	05/14/03	05/14/03
B16W80	002	S	03LE0578	04/28/03	05/14/03	05/15/03
B16W80	002 MS	S	03LE0578	04/28/03	05/14/03	05/15/03
B16W80	002 MSD	S	03LE0578	04/28/03	05/14/03	05/15/03
B16W81	003	S	03LE0578	04/29/03	05/14/03	05/15/03
B16W82	004	S	03LE0578	04/29/03	05/14/03	05/15/03
B16W83	005	S	03LE0578	04/29/03	05/14/03	05/15/03
B16W90	006	S	03LE0578	04/28/03	05/14/03	05/15/03

LAB QC:

BLK	MB1	S	03LE0578	N/A	05/14/03	05/14/03
BLK	MB1 BS	S	03LE0578	N/A	05/14/03	05/14/03



7/26/03



Analytical Report

Client: TNU-HANFORD F03-006
LVL #: 0305L329
SDG/SAF # H2194/F03-006

W.O. #: 11343-606-001-9999-00
Date Received: 05-02-2003


GC SCAN

Six (6) soil samples were collected on 04-28,29-2003.

The samples and their associated QC samples were prepared according to method 3580A (waste dilution-1g into 5mL) on 06-14-2003 and analyzed on 06-14,15-2003 according to Lionville Laboratory OPs based on SW846, 3rd Edition procedures based on method 8015B for Methanol, Ethyl Ether and 1-Butanol.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
2. Samples were prepared outside of holding time; however, samples were analyzed within required holding time. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
3. The method blank was below the reporting limits for all target compounds.
4. Surrogates are not currently employed in the methodology.
5. All blank spike recoveries were within acceptance criteria.
6. All matrix spike recoveries were within acceptance criteria.
7. All initial calibrations associated with this data set were within acceptance criteria.
8. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
9. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.


Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated


Date

r:\group\data\gcsc\tnu\0305w329x.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 15 pages.

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 036C157

Initiator: John Leach
Date: 6/14/13
Client: TNV

Batch: 0305C725
Samples: 42-5
Method: SWB46/MCAWW/CLP/

Parameter: 06CSC MCHWEE/UGM
Matrix: Soil
Prep Batch: 03LE0574

1. Reason for SDR

a. COC Discrepancy ☐ Tech Profile Error ☐ Client Request ☐ Sampler Error on C-O-C
☐ Transcription Error ☐ Wrong Test Code ☐ Other _____

b. General Discrepancy

☐ Missing Sample/Extract ☐ Container Broken ☐ Wrong Sample Pulled ☐ Label ID's Illegible
☐ Hold Time Exceeded ☐ Insufficient Sample ☐ Preservation Wrong ☐ Received Past Hold
☐ Improper Bottle Type ☐ Not Amenable to Analysis

Note*: Verified by [Log-In] or [Prep Group] (circle)...signature/date: _____

c. Problem (Include all relevant specific results; attach data if necessary)

Samples extracted. 2 days past hold.

2. Known or Probable Causes(s)

3. Discussion and Proposed Action

Other Description:

☐ Re-log
☐ Entire Batch
☐ Following Samples: _____
☐ Re-leach
☐ Re-extract
☐ Re-digest
☐ Revise EDD
☐ Change Test Code to _____
☐ Place On/Take Off Hold (circle)

Narrative

4. Project Manager Instructions...signature/date:

☒ Concur with Proposed Action
☐ Disagree with Proposed Action; See Instruction
☐ Include in Case Narrative
☐ Client Contacted:
Date/Person _____
☐ Add
☐ Cancel

5. Final Action...signature/date:

Other Explanation:

☐ Verified re-[log][leach][extract][digest][analysis] (circle)
☒ Included in Case Narrative
☐ Hard Copy COC Revised
☐ Electronic COC Revised
☐ EDD Corrections Completed

When Final Action has been recorded, forward original to QA Specialist for distribution and filing.

Route Distribution of Completed SDR

☐ X Initiator
☐ X Lab General Manager: M. Taylor
☐ X Project Mgr. Stone/Johnson/Haslett
☐ X Technical Mgr. Wesson/Daniels
☐ X QA (file)
☐ Data Management: Feldman
☐ Sample Prep: Beegle/Kiger

Route Distribution of Completed SDR

☐ Metals: Beegle
☐ Inorganic: Perrone
☐ GC/LC: Kiger
☐ MS: Rychlak/Layman
☐ Log-in: Melnic
☐ Admin: Soos
☐ Other: _____



GLOSSARY OF GC SCAN DATA

DATA QUALIFIERS

- U** = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J** = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B** = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E** = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I** = Interference.

ABBREVIATIONS

- BS** = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD** = Indicates blank spike duplicate.
- MS** = Indicates matrix spike.
- MSD** = Indicates matrix spike duplicate.
- DL** = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA** = Not Applicable.
- DF** = Dilution Factor.
- NR** = Not Required.
- SP** = Indicates Spiked Compound.



GLOSSARY OF GC SCAN DATA

- P** = This flag is used for an GC SCAN target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
- D** = This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- C** = This flag applies to a compound that has been confirmed by GC SCAN.

Lionville Laboratory, Inc.

GC SCAN

Report Date: 06/15/03 12:52

RFW Batch Number: 0305L329

Client: TNUHANFORD F03-006 H2194 Work Order: 11343606001 Page: 1

	Cust ID:	B16W79	B16W80	B16W80	B16W80	B16W81	B16W82
Sample	RFW#:	001	002	002 MS	002 MSD	003	004
Information	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====							
Methanol		28 U	25 U	98 %	98 %	23 U	23 U
Ethyl Ether		28 U	25 U	105 %	92 %	23 U	23 U
1-Butanol		28 U	25 U	94 %	94 %	23 U	23 U

	Cust ID:	B16W83	B16W90	BLK	BLK BS
Sample	RFW#:	005	006	03LE0578-MB1	03LE0578-MB1
Information	Matrix:	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00
	Units:	mg/kg	mg/kg	mg/kg	mg/kg
=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====					
Methanol		24 U	26 U	25 U	101 %
Ethyl Ether		24 U	26 U	25 U	86 %
1-Butanol		24 U	26 U	25 U	94 %

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.
 %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

Results

Q305L329

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

[illegible]

Special Instructions: Run Matrix QC
Saf #1 F03-0046

5-14-03, Per Client: Due Date: 6-16-03

Samples: 2.001 \rightarrow -006 Add Ag, As, B, Ba, Be, Bi, Cd, Cr, Cu,

3. H_2, Ni, Pb, Sb, Se / IC: Cl, F, NO_3 , NO_2 , PO_4, SO_4

4. INH3N, ICNTO IPH, 0624H, 0625X, 06CJC

5. OPCB, ODRS, OGRS

6

Relinquished by	Received by	Date	Time
FedEx	DJ Smith	5-2-03	0945

Relinquished by	Received by	Date	Time
ORIGINAL	COMPOSITE		
REWRITTEN	WASTE		

Discrepancies Between
Samples Labels and
COC Record? Y or N

7915 8463 3221

Lionville Laboratory Use Only

Samples were: ☒ or
1) Shipped ☒ or
Hand Delivered ☐
Airbill # see below
2) Ambient or Chilled ☐
3) Received in Good Condition ☒ or N
4) Samples Properly Preserved ☒ or N
5) Received Within Holding Times ☒ or N

Tamper Resistant Seal was:

1) Present on Outer Package (Y) or N

2) Unbroken on Outer Package (Y) or N

3) Present on Sample (Y) or N

4) Unbroken on Sample (Y) or N

COC Record Present
Upon Sample Rec't (Y) or N

Cooler
Temp. 1.3 °C

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-006-62		Page 1 of 1							
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N Data Turnaround 45 Days							
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (12.5'-15')		SAF No. F03-006		Air Quality <input type="checkbox"/>									
Ice Chest No. ERC 96 05F		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express									
Shipped To REIRA BERLINE SERVICES (Formerly TMA) 4/22/03		Offsite Property No. A030 220		Bill of Lading/Air Bill No. SEE OSL											
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None						
				Type of Container	aG	aG	aG	aG	aG						
				No. of Container(s)	1	1	1	1	1						
				Volume	120mL	60mL	120mL	60mL	60mL						
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions 4/22/03	Tritium - H3							
Sample No.	Matrix *	Sample Date	Sample Time												
B16W79	SOIL	4/28/03	1353	X	X	X									
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS 4/22/03 ** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. (4) Technetium-99; Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237 4/22/03 Personnel not available to relinquish samples from the 3728 Ref # 10 on 5.1.1.03							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time									
<i>Greg Thompson</i>		4/22/03		REF 1A 3728		42803 1645									
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time									
REF 1A 3728		5103 1100		SJGALE		5103 1100									
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time									
SJGALE		5103 1100		FED EX											
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time									
FED EX		5.2.03 0945		<i>[Signature]</i>		5.2.03 0945									
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time									
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time									
LABORATORY SECTION		Received By		Title				Date/Time							
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time							

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-63		Page 1 of 1		
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (17.5'-20')				SAF No. F03-006		Air Quality <input type="checkbox"/>			
Ice Chest No. ERC 96 056		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To RECPA EDERLINE SERVICES (Formerly TMA) 4/22/03		Offsite Property No. A030220				Bill of Lading/Air Bill No. SOE 03PC					
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage		Preservation		Cool 4C	Cool 4C	Cool 4C	None	None			
		Type of Container		aG	aG	aG	aG	aG			
		No. of Container(s)		1	1	1	1	1			
		Volume		120mL	60mL	120mL	60mL	60mL			
		SAMPLE ANALYSIS		Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions Ag 4/24/03	Tritium - H3			
Sample No.	Matrix *	Sample Date	Sample Time								
B16W80	SOIL	4/28/03	1510	X	X	X					
CHAIN OF POSSESSION		Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *	
Relinquished By/Removed From Greg Thomas 4/28/03		Received By/Stored In REF 1A 3728 4/28/03 1645		** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis.						S=Soil SE=Soliman SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other	
Relinquished By/Removed From REF 1A 3728 5/1/03 1100		Received By/Stored In SJGALE 5/1/03 1100		(1) Technetium-99; Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237							
Relinquished By/Removed From SJGALE 5/1/03		Received By/Stored In FED EX		Personnel not available to relinquish samples from the 3728 Ref # 1A on 5/1/03							
Relinquished By/Removed From 9/20/03 5:203 0945		Received By/Stored In 5/20/03 0945									
Relinquished By/Removed From		Received By/Stored In									
Relinquished By/Removed From		Received By/Stored In									
LABORATORY SECTION		Received By		Title		Date/Time					
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time					

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-64		Page 1 of 1		
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (27.5°-30°)		SAF No. F03-006		Air Quality <input type="checkbox"/>					
Ice Chest No. ERC 96 056		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To BERLINE SERVICES (Formerly TMA) RECRA <i>4/22/03</i>		Offsite Property No. A030220		Bill of Lading/Air Bill No. SGE 057C							
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None		
				Type of Container	aG	aG	aG	aG	aG		
				No. of Container(s)	1	1	1	1	1		
				Volume	120mL	60mL	120mL	60mL	60mL		
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions	Tridium - H3			
										TILTD	
Sample No.	Matrix *	Sample Date	Sample Time								
B16W81	SOIL	4/29/03	0745	X	X	X					BIOWAT (WOLF)
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>180 4/22/03</p> <p>* The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis.</p> <p>(1) Technetium-99, Strontium-89,90 - Total Sr, Isotopic Thorium (Thorium-232), Carbon-14, Iodine-129, Nickel-63, Neptunium-237</p> <p>180 4/22/03</p> <p>Personnel not available to relinquish samples from the 3728 Ref # 18 on 5/1/03</p>			
<i>RECRA R. f. Hulstrom</i>		<i>4/29/03 1400</i>		<i>RECRA R. f. Hulstrom</i>		<i>4/29/03 1400</i>					
<i>RECRA R. f. Hulstrom</i>		<i>4/29/03 1400</i>		<i>IB 3728</i>		<i>4/29/03</i>					
<i>IB 3728</i>		<i>5/1/03 1100</i>		<i>SGALC</i>		<i>5/103 1100</i>					
<i>SGALC</i>		<i>5/103 1100</i>		<i>FED EX</i>							
<i>SGALC</i>		<i>5/2/03 0945</i>		<i>SGALC</i>		<i>5/2/03 0945</i>					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>Matrix *</p> <p>S=Soil SE=Soilment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Dram Solids DL=Dram Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other</p>			
<i>SGALC</i>		<i>5/2/03 0945</i>		<i>SGALC</i>		<i>5/2/03 0945</i>					
LABORATORY SECTION		Received By		Title				Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time			

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-65		Page 1 of 1			
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days		
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (37.5°-40°)		SAF No. F03-006		Air Quality <input type="checkbox"/>						
Ice Chest No. ERC 96 055		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express						
Shipped To REERA 1st 4/22/03 BERLINE SERVICES (Formerly TMA)		Offsite Property No. A030220		Bill of Lading/Air Bill No. 562505PC								
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None			
				Type of Container	aG	aG	aG	aG	aG			
				No. of Container(s)	1	1	1	1	1			
				Volume	120mL	60mL	120mL	60mL	60mL			
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions.	Tritium - H3				
Sample No.	Matrix *	Sample Date	Sample Time									
B16W82	SOIL	4/29/03	0900	X	X	X					B16W48 (WELF)	
CHAIN OF POSSESSION				Sign/Print Names		SPECIAL INSTRUCTIONS					Matrix *	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>7/22/03</p> <p>** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis.</p> <p>(4) Technetium-99; Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237</p> <p>7/22/03</p> <p>Personnel not available to relinquish samples from the 3728 Ref # 10 on 5/1/03</p>				<p>S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other</p>
MAXIMON PRODUCTION		4/29/03 1400		R.F. 1000		4/29/03 1400						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
R.F. 1000		4/29/03		1B 3728		4/29/03						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
1B 3728		5/10/03 1100		SIGALE/ML		5/10/03 1100						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
SIGALE/ML		5/10/03 1100		SIGALE/ML		5/10/03 1100						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
FED EX		5/2/03 0945		FED EX		5/2/03 0945						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
LABORATORY SECTION	Received By		Title		Date/Time							
FINAL SAMPLE DISPOSITION	Disposal Method		Disposed By		Date/Time							

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						F03-006-66		Page 1 of 1	
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (47.5°-50°)		SAF No. F03-006		Air Quality <input type="checkbox"/>					
Ice Chest No. ERC 96 052		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To NEERA TEBERLINE SERVICES (Formerly TMA) <i>see 4/14/03</i>		Offsite Property No. A030220				Bill of Lading/Air Bill No. SEE OSPC					
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage		Preservation	Cool 4C	Cool 4C	Cool 4C	None	None				
		Type of Container	aG	aG	aG	aG	aG				
		No. of Container(s)	1	1	1	1	1				
		Volume	120mL	60mL	120mL	60mL	60mL				
SAMPLE ANALYSIS		Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions	Trium - H3					
Sample No.	Matrix *	Sample Date	Sample Time								
B16W83	SOIL	4/24/03	1020	X	X	X					B16W83 (W5CF)
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>SPECIAL INSTRUCTIONS <i>see 4/24/03</i></p> <p>** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis.</p> <p>(1) Technetium-99; Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237</p> <p><i>see 4/24/03</i></p> <p>Personnel not available to relinquish samples from the 3728 Ref # 1B on 5/11/03</p>			
<i>max johan</i>		4/24/03 1400		<i>R. F. Hulstrom</i>		4/24/03 1400					
<i>R. F. Hulstrom</i>		4/29/03 1100		<i>IB</i>		3728 4/29/03					
<i>IB</i>		3728 5/03 1100		<i>SJ GALE</i>		5/03 1100					
<i>SJ GALE</i>		5/03 1100		<i>FED EX</i>							
<i>see 5-2-03 0945</i>		5-2-03 0945		<i>see 5-2-03 0945</i>		5-2-03 0945					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>Matrix *</p> <p>S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other</p>			
LABORATORY SECTION		Received By		Title		Date/Time					
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time					

BHI-EE-011 (03/01/2002)

FH-Central Plateau Project			CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-006-74	
Collector Johansen/Pope/Pfister			Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling			Sampling Location 216-A-37 (C4106); (0.5')			SAF No. F03-006		Price Code 8N Air Quality <input type="checkbox"/>
Ice Chest No. ERC 96 056			Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express	
Shipped To MS103 REGRA BERLINE SERVICES (Formerly TMA)			Offsite Property No. A030220			Bill of Lading/Air Bill No. SEE OSPC		
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C		
				Type of Container	aG	aG		
				No. of Container(s)	1	1		
				Volume	60mL	250mL		
SAMPLE ANALYSIS				Pesticides - 8081	Chloro- Herbicides - EPA8151			
Sample No.	Matrix *	Sample Date	Sample Time					
B16W91	SOIL	4/28/03	1130	X	X			
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				
Relinquished By/Removed From		Date/Time	Sign/Print Names		Personnel not available to relinquish samples from the 3728 Ref # 1A on 5/11/03			
Greg Thomas		4/28/03	Received By/Stored In					
REF 1A 3728		5103 1100	SDGALY/DEL					
S. GALY/DEL		5103 1100	FED EX					
Shed Ex		5-2-03 0945	S. GALY/DEL					
Relinquished By/Removed From		Date/Time	Received By/Stored In		Matrix * S=Soil SE=Soil in m SQ=Solid SL=Sludge W=Water O=Oil A=Air DS=Drown Solids DL=Drown Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other			
Received By/Removed From		Date/Time	Received By/Stored In					
Received By/Removed From		Date/Time	Received By/Stored In					
Received By/Removed From		Date/Time	Received By/Stored In					
LABORATORY SECTION		Received By	Title		Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method	Disposed By		Date/Time			

LIONVILLE LABORATORY INCORPORATED

SAMPLE RECEIPT CHECKLIST

ENT: TNU Hamford

Phase Order/Project:

DATE: 5-2-03

SOW# / Release #: F03-006

Laboratory SDG #:

0305L329

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

- | | | | | |
|--|---|-----------------------------|---|--|
| 1. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 2. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 3. Airbill # recorded? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 5. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 7. All samples on coc received? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 8. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 10. Shipment meets LVL1 Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 11. Where applicable, bar code labels are affixed to coc? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 12. coc signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 13. coc will be faxed or emailed to client? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 14. Project Manager/Client contacted concerning discrepancies? (name/date) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |

Cooler # / temp (°C) and Comments:

ELC 96-056 / 1.3°C

Laboratory Sample Custodian:

[Signature]

Laboratory Project Manager:

15

Lionville Laboratory, Inc.
8015 ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2194

DATE RECEIVED: 05/02/03

LVL LOT # :0305L329

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B16W79	001	S	03LE0586	04/28/03	05/15/03	05/15/03
B16W80	002	S	03LE0586	04/28/03	05/15/03	05/15/03
B16W81	003	S	03LE0586	04/29/03	05/15/03	05/15/03
B16W81	003 MS	S	03LE0586	04/29/03	05/15/03	05/15/03
B16W81	003 MSD	S	03LE0586	04/29/03	05/15/03	05/15/03
B16W82	004	S	03LE0586	04/29/03	05/15/03	05/15/03
B16W83	005	S	03LE0586	04/29/03	05/15/03	05/15/03
B16W90	006	S	03LE0586	04/28/03	05/15/03	05/15/03

LAB QC:

BLK	MB1	S	03LE0586	N/A	05/15/03	05/20/03
BLK	MB1 BS	S	03LE0586	N/A	05/15/03	05/15/03



Rec'd 6/12/03



Analytical Report

Client: TNU-HANFORD F03-006
LVL #: 0305L329
SDG/SAF # H2194/F03-006

W.O. #: 11343-606-001-9999-00

Date Received: 05-02-2003

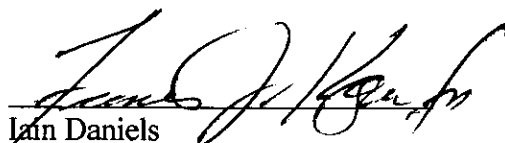
GC SCAN

Six (6) soil samples were collected on 04-28,29-2003.

The samples and their associated QC samples were prepared according to method 3580A (waste dilution-1g into 5mL) on 05-15-2003 and analyzed according to Lionville Laboratory OPs based on SW846, 3rd Edition procedure, based on method 8015B on 05-15,20-2003 for Ethylene Glycol.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
2. Samples were prepared outside of holding time. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
3. Surrogates are not currently employed in the methodology.
4. The blank spike recovery was within acceptance criteria.
5. The matrix spike recoveries were within acceptance criteria.
6. All initial calibrations associated with this data set were within acceptance criteria.
7. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
8. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.


Iain Daniels

Laboratory Manager

Lionville Laboratory Incorporated


Date

r:\group\data\gcsc\tnu\0305-329.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 15 pages.

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 0360198

Initiator: John Lach Batch: 03054325 335, 357, 366, 372 Parameter: OGCSC EC
 Date: 6/15/03 Samples: All 325, All Matrix: SD-1
 Client: TNU Method: SW846/MCAWW/CLPI Prep Batch: 0320586

1. Reason for SDR

- a. COC Discrepancy ☐ Tech Profile Error ☐ Client Request ☐ Sampler Error on C-O-C
☐ Transcription Error ☐ Wrong Test Code ☐ Other _____
- b. General Discrepancy
☐ Missing Sample/Extract ☐ Container Broken ☐ Wrong Sample Pulled ☐ Label ID's Illegible
☐ Hold Time Exceeded ☐ Insufficient Sample ☐ Preservation Wrong ☐ Received Past Hold
☐ Improper Bottle Type ☐ Not Amenable to Analysis

Note: Verified by [Log-In] or [Prep Group] (circle)...signature/date: _____

c. Problem (Include all relevant specific results; attach data if necessary)

- ① Samples 3251-6 extracted 2 days past hold.
 ② There was a h.t. in the blank above the reporting limit.

2. Known or Probable Causes(s)

3. Discussion and Proposed Action

Other Description:

- ☐ Re-log
☐ Entire Batch
☐ Following Samples: _____
☐ Re-leach
☐ Re-extract
☐ Re-digest
☐ Revise EDD
☐ Change Test Code to _____
☐ Place On/Take Off Hold (circle)

Narrative.
 ② No h.t.s in samples. Julian.
 01-15 Sample rerun on 5/20/03 (C)

4. Project Manager Instructions...signature/date:

- ☒ Concur with Proposed Action
☐ Disagree with Proposed Action; See Instruction
☐ Include in Case Narrative
☐ Client Contacted:
 Date/Person _____
☐ Add
☐ Cancel

5. Final Action...signature/date:

Other Explanation:

- ☐ Verified re-[log][leach][extract][digest][analysis] (circle)
☒ Included in Case Narrative
☐ Hard Copy COC Revised
☐ Electronic COC Revised
☐ EDD Corrections Completed

When Final Action has been recorded, forward original to QA Specialist for distribution and filing.

Route Distribution of Completed SDR
☒ Initiator
☒ Lab General Manager: M. Taylor
☒ Project Mgr: Stone/Johnson/Haslett
☒ Technical Mgr: Wesson/Daniels
☒ QA (file)
☐ Data Management: Feldman
☐ Sample Prep: Beegle/Kiger

Route Distribution of Completed SDR
☐ Metals: Beegle
☐ Inorganic: Perrone
☐ GC/LC: Kiger
☐ MS: Rychlak/Layman
☐ Log-in: Melnic
☐ Admin: Soos
☐ Other: _____



GLOSSARY OF GC SCAN DATA

DATA QUALIFIERS

- U** = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J** = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B** = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E** = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I** = Interference.

ABBREVIATIONS

- BS** = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD** = Indicates blank spike duplicate.
- MS** = Indicates matrix spike.
- MSD** = Indicates matrix spike duplicate.
- DL** = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA** = Not Applicable.
- DF** = Dilution Factor.
- NR** = Not Required.
- SP** = Indicates Spiked Compound.



GLOSSARY OF GC SCAN DATA

- P** = This flag is used for an GC SCAN target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
- D** = This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- C** = This flag applies to a compound that has been confirmed by GC SCAN.

Lionville Laboratory, Inc.

Nonhalogenated Volatiles by GC, Method 8015

Report Date: 06/19/03 15:11

RFW Batch Number: 0305L329

Client: TNUHANFORD F03-006 H2194 Work Order: 11343606001 Page: 1

	Cust ID:	B16W79	B16W80	B16W81	B16W81	B16W81	B16W82
Sample	RFW#:	001	002	003	003 MS	003 MSD	004
Information	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg

	fl	fl	fl	fl	fl	fl	fl
Ethylene Glycol	25.5 U	23.5 U	26.0 U	99 %	97 %	25.5 U	

	Cust ID:	B16W83	B16W90	BLK	BLK BS
Sample	RFW#:	005	006	03LE0586-MB1	03LE0586-MB1
Information	Matrix:	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00
	Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg

	fl	fl	fl	fl	fl	fl
Ethylene Glycol	24.0 U	22.0 U	25.0 U	108 %		

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.
 %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

Dec 17/03

Q305L329

[illegible]

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-62		Page 1 of 1		
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (12.5'-15')				SAF No. F03-006		Air Quality <input type="checkbox"/>			
Ice Chest No. ERC 96 054		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To EDERLINE SERVICES (Formerly TMA) RECRA <i>4/22/03</i>		Offsite Property No. A030 220				Bill of Lading/Air Bill No. SEE OSPL					
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None		
				Type of Container	aG	aG	aG	aG	aG		
				No. of Container(s)	1	1	1	1	1		
				Volume	120mL	60mL	120mL	60mL	60mL		
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions <i>4/22/03</i>	Tritium - H3			
Sample No.	Matrix *	Sample Date	Sample Time								
B16W79	SOIL	<i>4/28/03</i>	<i>1353</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>V</i>				
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS <i>4/22/03</i> ** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. (4) Technetium-90; Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237 <i>4/22/03</i> Personnel not available to relinquish samples from the 3728 Ref # <i>1B</i> on <i>5.1.1.03</i>			
Relinquished By/Removed From <i>Greg Thompson</i>		Date/Time <i>4/28/03 1645</i>		Received By/Stored In <i>REFIA 3728</i>		Date/Time <i>42803 1645</i>					
Relinquished By/Removed From <i>REFIA 3728</i>		Date/Time <i>5103 1100</i>		Received By/Stored In <i>SJGALE</i>		Date/Time <i>5103 1100</i>					
Relinquished By/Removed From <i>SJGALE</i>		Date/Time <i>5103 1100</i>		Received By/Stored In <i>FED EX</i>		Date/Time					
Relinquished By/Removed From <i>Greg Thompson</i>		Date/Time <i>5.2.03 0945</i>		Received By/Stored In <i>[Signature]</i>		Date/Time <i>5.2.03 0945</i>					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		Matrix * S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
LABORATORY SECTION		Received By		Title				Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time			

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-63		Page 1 of 1							
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days						
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (17.5'-20')				SAF No. F03-006		Air Quality <input type="checkbox"/>								
Ice Chest No. ERC 96 056		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express 5										
Shipped To EBERLINE SERVICES (Formerly TMA) RELRA <i>4/22/03</i>		Offsite Property No. A030220				Bill of Lading/Air Bill No. SOE 059C										
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage					Preservation	Cool 4C	Cool 4C	Cool 4C	None	None						
					Type of Container	aG	aG	aG	aG	aG						
					No. of Container(s)	1	1	1	1	1						
					Volume	120mL	60mL	120mL	60mL	60mL						
					SAMPLE ANALYSIS					Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions <i>AG 4/22/03</i>	Tritium - H3		
Sample No.	Matrix *	Sample Date	Sample Time													
B16W80	SOIL	4/28/03	1560	X	X	X	/									
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p><i>180 4/22/03</i></p> <p>** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis.</p> <p><i>(4) Technetium-99; Strontium-89,90 - Total Sr; isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237</i></p> <p><i>4/22/03</i></p> <p>Personnel not available to relinquish samples from the 3728 Ref # 1A on 5/1/03</p>				<p>S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other</p>				
<i>Greg Thomas</i>		<i>4/28/03</i>		<i>REF 1A 3728</i>		<i>4/28/03 1645</i>										
<i>RELRA</i>		<i>5/1/03 1100</i>		<i>SJGALE</i>		<i>5/1/03 1100</i>										
<i>SJGALE</i>		<i>5/1/03</i>		<i>FED EX</i>												
<i>4/22/03 0945</i>		<i>5/2/03 0945</i>		<i>5/2/03 0945</i>												
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time										
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time										
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time										
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time										
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time										
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time										
LABORATORY SECTION		Received By		Title		Date/Time										
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time										

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-64		Page 1 of 1		
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (27.5'-30')				SAF No. F03-006		Air Quality <input type="checkbox"/>			
Ice Chest No. <u>ERC 96 056</u>		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express				<u>2</u>	
Shipped To <u>KECRA</u> <u>BERLINE SERVICES (Formerly TMA)</u> <u>4/24/03</u>		Offsite Property No. <u>A030220</u>				Bill of Lading/Air Bill No. <u>SOE 057C</u>					
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None		
				Type of Container	aG	aG	aG	aG	aG		
				No. of Container(s)	1	1	1	1	1		
				Volume	120mL	60mL	120mL	60mL	60mL		
				SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions.
Sample No.	Matrix *	Sample Date	Sample Time								
B16W81	SOIL	4/29/03	0745	X	X	X					B16W81 (W5LF)
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis.</p> <p>(1) Technetium-99, Strontium-89,90 - Total Sr, Isotopic Thorium (Thorium-232), Carbon-14, Iodine-129, Nickel-63, Neptunium-237</p> <p>Personnel not available to relinquish samples from the 3728 Ref #1B on 5/11/03</p>			
<u>Matthew Hulstrom</u>		<u>4/29/03 1400</u>		<u>ERC</u>		<u>4/29/03 1400</u>					
<u>Relinquished By/Removed From</u>		<u>Date/Time</u>		<u>Received By/Stored In</u>		<u>Date/Time</u>					
<u>KECRA R. F. Hulstrom</u>		<u>4/29/03 1400</u>		<u>IB 3728</u>		<u>4/29/03</u>					
<u>Relinquished By/Removed From</u>		<u>Date/Time</u>		<u>Received By/Stored In</u>		<u>Date/Time</u>					
<u>IB 3728</u>		<u>5/1/03 1100</u>		<u>SJGALE</u>		<u>5/1/03 1100</u>					
<u>Relinquished By/Removed From</u>		<u>Date/Time</u>		<u>Received By/Stored In</u>		<u>Date/Time</u>		<p>Matrix *</p> <p>S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Dry Solids DL=Dry Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other</p>			
<u>SJGALE</u>		<u>5/1/03 1100</u>		<u>FED EX</u>							
<u>Relinquished By/Removed From</u>		<u>Date/Time</u>		<u>Received By/Stored In</u>		<u>Date/Time</u>					
<u>5/2/03 0945</u>				<u>5/2/03 0945</u>							
<u>Relinquished By/Removed From</u>		<u>Date/Time</u>		<u>Received By/Stored In</u>		<u>Date/Time</u>					
LABORATORY SECTION		Received By		Title				Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time			

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-65		Page 1 of 1		
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (37.5'-40')		SAF No. F03-006		Air Quality <input type="checkbox"/>					
Ice Chest No. ERC 9.6 055		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To RECR 1st EBERLINE SERVICES (Formerly TMA) 4/22/03		Offsite Property No. A030220		Bill of Lading/Air Bill No. 5025 05PC							
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None		
				Type of Container	aG	aG	aG	aG	aG		
				No. of Container(s)	1	1	1	1	1		
				Volume	120mL	60mL	120mL	60mL	60mL		
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions.	Tritium - H3			
Sample No.	Matrix *	Sample Date	Sample Time								
B16W82	SOIL	4/29/03	0900	X	X	X				B16W48 (W5CF)	
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>4/22/03</p> <p>** The laboratory is to achieve a detection limit of 30.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis.</p> <p>(4) Technetium-99, Strontium-89,90 - Total Sr, Isotopic Thorium (Thorium-232), Carbon-14, Iodine-129, Nickel-63, Neptunium-237</p> <p>7/22/03</p> <p>Personnel not available to relinquish samples from the 3728 Ref # 10 on 5.11.03</p>			
MDR		4/29/03 1400		R. F. Lee		4/29/03 1400					
R. F. Lee		4/29/03 1400		1B		3728 4.29.03					
1B		3728 5.10.03 1100		SIGALE		5.10.03 1100					
SIGALE		5.10.03 1100		SIGALE		5.10.03 1100					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>Matrix *</p> <p>S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other</p>			
1B		5.10.03 1100		SIGALE		5.10.03 1100					
SIGALE		5.10.03 1100		SIGALE		5.10.03 1100					
SIGALE		5.10.03 1100		SIGALE		5.10.03 1100					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>Ref # 10 on 5.11.03</p>			
1B		5.10.03 1100		SIGALE		5.10.03 1100					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
1B		5.10.03 1100		SIGALE		5.10.03 1100					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
1B		5.10.03 1100		SIGALE		5.10.03 1100					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
1B		5.10.03 1100		SIGALE		5.10.03 1100					
LABORATORY SECTION		Received By		Title		Date/Time					
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time					

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-66		Page 1 of 1	
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (47.5'-50')		SAF No. F03-006		Air Quality <input type="checkbox"/>				
Ice Chest No. ERC 96 056		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express				
Shipped To REURA EBERLINE SERVICES (Formerly TMA) <i>the 4/14/03</i>		Offsite Property No. A030220		Bill of Lading/Air Bill No. SEE OSPC						
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage		Preservation	Cool 4C	Cool 4C	Cool 4C	None	None			
		Type of Container	aG	aG	aG	aG	aG			
		No. of Container(s)	1	1	1	1	1			
		Volume	120mL	60mL	120mL	60mL	60mL			
SAMPLE ANALYSIS		Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions <i>984 4/22/03</i>	Tritium - HD				
							Ti1070:			
Sample No.	Matrix *	Sample Date	Sample Time							
B16W83	SOIL	4/29/03	1020	X	X	X				B16W83 (W5CF)
CHAIN OF POSSESSION		Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix * S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue W=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <i>1000</i> <i>4-29-03</i>		Received By/Stored In <i>1000</i> <i>4-29-03</i>				** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis.				
Relinquished By/Removed From <i>1000</i> <i>4-29-03</i>		Received By/Stored In <i>1000</i> <i>4-29-03</i>				(1)-Technetium-99; Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237				
Relinquished By/Removed From <i>1000</i> <i>4-29-03</i>		Received By/Stored In <i>1000</i> <i>4-29-03</i>				<i>984 4/22/03</i>				
Relinquished By/Removed From <i>1000</i> <i>4-29-03</i>		Received By/Stored In <i>1000</i> <i>4-29-03</i>				Personnel not available to relinquish samples from the 3728 Ref # 18 on 511103				
Relinquished By/Removed From <i>1000</i> <i>4-29-03</i>		Received By/Stored In <i>1000</i> <i>4-29-03</i>								
LABORATORY SECTION	Received By	Title				Date/Time				
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By				Date/Time				

FH-Central Plateau Project			CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-73		Page 1 of 1		
Collector Johansen/Pope/Pfister			Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling			Sampling Location 216-A-37 (C4106); (17.5'-20')			SAF No. F03-006		Air Quality <input type="checkbox"/>				
Ice Chest No. ERC 96 056			Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To PERRA EBERTINE SERVICES (Formerly TMA) 4/22/03			Offsite Property No. A030220			Bill of Lading/Air Bill No. 38E 03PC						
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage			Preservation	Cool 4C	Cool 4C	Cool 4C	None	None				
			Type of Container	aG	aG	aG	aG	aG				
			No. of Container(s)	1	1	1	1	1				
			Volume	120mL	60mL	120mL	60mL	60mL				
SAMPLE ANALYSIS			Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions	Tritium - H3					
			4/22/03									
Sample No.	Matrix *	Sample Date	Sample Time									
B16W90	SOIL	4/28/03	1510	X	X	X						
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix * S=Soil SE=Seepage SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <i>Greg Thomas</i>		Date/Time 1645		Received By/Stored In <i>REF 1A 3728</i>		Date/Time 42803 1645		4/22/03 ** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. (1) Technetium-99; Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237 4/22/03 Personnel not available to relinquish samples from the 3728 Ref # <u>1A</u> on <u>5/1/03</u>				
Relinquished By/Removed From <i>REF 1A 3728</i>		Date/Time 5103 1100		Received By/Stored In <i>SJGALC/ML</i>		Date/Time 5103 1100						
Relinquished By/Removed From <i>SJGALC/ML</i>		Date/Time 5103 1100		Received By/Stored In <i>FED EX</i>		Date/Time						
Relinquished By/Removed From <i>Red E</i>		Date/Time 5-2-03 0915		Received By/Stored In <i>2/Min</i>		Date/Time 5-2-03 0945						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
LABORATORY SECTION		Received By		Title				Date/Time				
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time				

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-006-74	
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (0.5')		SAF No. F03-006		Price Code 8N Data Turnaround 45 Days	
Ice Chest No. ERC 96 056		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express	
Shipped To AD5103 RECRA BERLINE SERVICES (Formerly TMA)		Offsite Property No. A030 220		Bill of Lading/Air Bill No. SEE OSPC			
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	
				Type of Container	aG	aG	
				No. of Container(s)	1	1	
				Volume	60mL	250mL	
SAMPLE ANALYSIS				Pesticides - 8081	Chloro- Herbicides - EPA8151		
Sample No.	Matrix *	Sample Date	Sample Time				
B16W91	SOIL	4/28/03	1130	X	X		
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time	
<i>Greg Thomas</i>		4/28/03		REF 1A 3728		4/28/03 1645	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time	
REF 1A 3728		5103 1100		SDGALV/SL		5103 1100	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time	
SDGALV/SL		5103 1100		FED EX			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time	
Jed Ex		5-2-03 0945		SD/MSD		5-2-03 0945	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time	
LABORATORY SECTION				Received By			
				Title			
FINAL SAMPLE DISPOSITION				Disposal Method			
				Disposed By			
				Date/Time			
				Date/Time			

LIONVILLE LABORATORY INCORPORATED SAMPLE RECEIPT CHECKLIST

Client: TNU Hartford

Trace Order/Project:

DATE: 5-2-03

FW SOW# / Release #: F03-006

Laboratory SDG #:

0305L329

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

- | | | | | |
|--|---|-----------------------------|---|--|
| 1. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 2. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 3. Airbill # recorded? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 5. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 7. All samples on coc received? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 8. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 10. Shipment meets LvLI Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 11. Where applicable, bar code labels are affixed to coc? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 12. coc signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 13. coc will be faxed or emailed to client? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 14. Project Manager/Client contacted concerning discrepancies? (name/date) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |

Cooler # / temp (°C) and Comments:

ECC 96-056 / 1.3°

Laboratory Sample Custodian:

Laboratory Project Manager:

[Signature]

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Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2194



DATE RECEIVED: 05/02/03

LVL LOT # :0305L329

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B16W79						
SILVER, TOTAL	001	S	03L0284	04/28/03	05/22/03	05/31/03
SILVER, TOTAL	001 REP	S	03L0284	04/28/03	05/22/03	05/31/03
SILVER, TOTAL	001 MS	S	03L0284	04/28/03	05/22/03	05/31/03
ARSENIC, TOTAL	001	S	03L0284	04/28/03	05/22/03	05/31/03
ARSENIC, TOTAL	001 REP	S	03L0284	04/28/03	05/22/03	05/31/03
ARSENIC, TOTAL	001 MS	S	03L0284	04/28/03	05/22/03	05/31/03
BORON, TOTAL	001	S	03L0284	04/28/03	05/22/03	05/31/03
BORON, TOTAL	001 REP	S	03L0284	04/28/03	05/22/03	05/31/03
BORON, TOTAL	001 MS	S	03L0284	04/28/03	05/22/03	05/31/03
BARIUM, TOTAL	001	S	03L0284	04/28/03	05/22/03	05/31/03
BARIUM, TOTAL	001 REP	S	03L0284	04/28/03	05/22/03	05/31/03
BARIUM, TOTAL	001 MS	S	03L0284	04/28/03	05/22/03	05/31/03
BERYLLIUM, TOTAL	001	S	03L0284	04/28/03	05/22/03	05/31/03
BERYLLIUM, TOTAL	001 REP	S	03L0284	04/28/03	05/22/03	05/31/03
BERYLLIUM, TOTAL	001 MS	S	03L0284	04/28/03	05/22/03	05/31/03
BISMUTH, TOTAL	001	S	03L0284	04/28/03	05/22/03	05/31/03
BISMUTH, TOTAL REP	001 REP	S	03L0284	04/28/03	05/22/03	05/31/03
BISMUTH, TOTAL SPIKE	001 MS	S	03L0284	04/28/03	05/22/03	05/31/03
CADMIUM, TOTAL	001	S	03L0284	04/28/03	05/22/03	05/31/03
CADMIUM, TOTAL	001 REP	S	03L0284	04/28/03	05/22/03	05/31/03
CADMIUM, TOTAL	001 MS	S	03L0284	04/28/03	05/22/03	05/31/03
CHROMIUM, TOTAL	001	S	03L0284	04/28/03	05/22/03	05/31/03
CHROMIUM, TOTAL	001 REP	S	03L0284	04/28/03	05/22/03	05/31/03
CHROMIUM, TOTAL	001 MS	S	03L0284	04/28/03	05/22/03	05/31/03
COPPER, TOTAL	001	S	03L0284	04/28/03	05/22/03	05/31/03
COPPER, TOTAL	001 REP	S	03L0284	04/28/03	05/22/03	05/31/03
COPPER, TOTAL	001 MS	S	03L0284	04/28/03	05/22/03	05/31/03
MERCURY, TOTAL	001	S	03C0115	04/28/03	05/16/03	05/19/03
MERCURY, TOTAL	001 REP	S	03C0115	04/28/03	05/16/03	05/19/03
MERCURY, TOTAL	001 MS	S	03C0115	04/28/03	05/16/03	05/19/03
NICKEL, TOTAL	001	S	03L0284	04/28/03	05/22/03	05/31/03
NICKEL, TOTAL	001 REP	S	03L0284	04/28/03	05/22/03	05/31/03
NICKEL, TOTAL	001 MS	S	03L0284	04/28/03	05/22/03	05/31/03
LEAD, TOTAL	001	S	03L0284	04/28/03	05/22/03	05/31/03
LEAD, TOTAL	001 REP	S	03L0284	04/28/03	05/22/03	05/31/03

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2194

DATE RECEIVED: 05/02/03

LVL LOT # :0305L329

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
LEAD, TOTAL	001 MS	S	03L0284	04/28/03	05/22/03	05/31/03
ANTIMONY, TOTAL	001	S	03L0284	04/28/03	05/22/03	05/31/03
ANTIMONY, TOTAL	001 REP	S	03L0284	04/28/03	05/22/03	05/31/03
ANTIMONY, TOTAL	001 MS	S	03L0284	04/28/03	05/22/03	05/31/03
SELENIUM, TOTAL	001	S	03L0284	04/28/03	05/22/03	05/31/03
SELENIUM, TOTAL	001 REP	S	03L0284	04/28/03	05/22/03	05/31/03
SELENIUM, TOTAL	001 MS	S	03L0284	04/28/03	05/22/03	05/31/03

B16W80

SILVER, TOTAL	002	S	03L0284	04/28/03	05/22/03	05/31/03
ARSENIC, TOTAL	002	S	03L0284	04/28/03	05/22/03	05/31/03
BORON, TOTAL	002	S	03L0284	04/28/03	05/22/03	05/31/03
BARIUM, TOTAL	002	S	03L0284	04/28/03	05/22/03	05/31/03
BERYLLIUM, TOTAL	002	S	03L0284	04/28/03	05/22/03	05/31/03
BISMUTH, TOTAL	002	S	03L0284	04/28/03	05/22/03	05/31/03
CADMIUM, TOTAL	002	S	03L0284	04/28/03	05/22/03	05/31/03
CHROMIUM, TOTAL	002	S	03L0284	04/28/03	05/22/03	05/31/03
COPPER, TOTAL	002	S	03L0284	04/28/03	05/22/03	05/31/03
MERCURY, TOTAL	002	S	03C0115	04/28/03	05/16/03	05/19/03
NICKEL, TOTAL	002	S	03L0284	04/28/03	05/22/03	05/31/03
LEAD, TOTAL	002	S	03L0284	04/28/03	05/22/03	05/31/03
ANTIMONY, TOTAL	002	S	03L0284	04/28/03	05/22/03	05/31/03
SELENIUM, TOTAL	002	S	03L0284	04/28/03	05/22/03	05/31/03

B16W81

SILVER, TOTAL	003	S	03L0284	04/29/03	05/22/03	05/31/03
ARSENIC, TOTAL	003	S	03L0284	04/29/03	05/22/03	05/31/03
BORON, TOTAL	003	S	03L0284	04/29/03	05/22/03	05/31/03
BARIUM, TOTAL	003	S	03L0284	04/29/03	05/22/03	05/31/03
BERYLLIUM, TOTAL	003	S	03L0284	04/29/03	05/22/03	05/31/03
BISMUTH, TOTAL	003	S	03L0284	04/29/03	05/22/03	05/31/03
CADMIUM, TOTAL	003	S	03L0284	04/29/03	05/22/03	05/31/03
CHROMIUM, TOTAL	003	S	03L0284	04/29/03	05/22/03	05/31/03
COPPER, TOTAL	003	S	03L0284	04/29/03	05/22/03	05/31/03
MERCURY, TOTAL	003	S	03C0115	04/29/03	05/16/03	05/19/03
NICKEL, TOTAL	003	S	03L0284	04/29/03	05/22/03	05/31/03

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2194

DATE RECEIVED: 05/02/03

LVL LOT # :0305L329

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
LEAD, TOTAL	003	S	03L0284	04/29/03	05/22/03	05/31/03
ANTIMONY, TOTAL	003	S	03L0284	04/29/03	05/22/03	05/31/03
SELENIUM, TOTAL	003	S	03L0284	04/29/03	05/22/03	05/31/03

B16W82

SILVER, TOTAL	004	S	03L0284	04/29/03	05/22/03	05/31/03
ARSENIC, TOTAL	004	S	03L0284	04/29/03	05/22/03	05/31/03
BORON, TOTAL	004	S	03L0284	04/29/03	05/22/03	05/31/03
BARIUM, TOTAL	004	S	03L0284	04/29/03	05/22/03	05/31/03
BERYLLIUM, TOTAL	004	S	03L0284	04/29/03	05/22/03	05/31/03
BISMUTH, TOTAL	004	S	03L0284	04/29/03	05/22/03	05/31/03
CADMIUM, TOTAL	004	S	03L0284	04/29/03	05/22/03	05/31/03
CHROMIUM, TOTAL	004	S	03L0284	04/29/03	05/22/03	05/31/03
COPPER, TOTAL	004	S	03L0284	04/29/03	05/22/03	05/31/03
MERCURY, TOTAL	004	S	03C0115	04/29/03	05/16/03	05/19/03
NICKEL, TOTAL	004	S	03L0284	04/29/03	05/22/03	05/31/03
LEAD, TOTAL	004	S	03L0284	04/29/03	05/22/03	05/31/03
ANTIMONY, TOTAL	004	S	03L0284	04/29/03	05/22/03	05/31/03
SELENIUM, TOTAL	004	S	03L0284	04/29/03	05/22/03	05/31/03

B16W83

SILVER, TOTAL	005	S	03L0284	04/29/03	05/22/03	05/31/03
ARSENIC, TOTAL	005	S	03L0284	04/29/03	05/22/03	05/31/03
BORON, TOTAL	005	S	03L0284	04/29/03	05/22/03	05/31/03
BARIUM, TOTAL	005	S	03L0284	04/29/03	05/22/03	05/31/03
BERYLLIUM, TOTAL	005	S	03L0284	04/29/03	05/22/03	05/31/03
BISMUTH, TOTAL	005	S	03L0284	04/29/03	05/22/03	05/31/03
CADMIUM, TOTAL	005	S	03L0284	04/29/03	05/22/03	05/31/03
CHROMIUM, TOTAL	005	S	03L0284	04/29/03	05/22/03	05/31/03
COPPER, TOTAL	005	S	03L0284	04/29/03	05/22/03	05/31/03
MERCURY, TOTAL	005	S	03C0115	04/29/03	05/16/03	05/19/03
NICKEL, TOTAL	005	S	03L0284	04/29/03	05/22/03	05/31/03
LEAD, TOTAL	005	S	03L0284	04/29/03	05/22/03	05/31/03
ANTIMONY, TOTAL	005	S	03L0284	04/29/03	05/22/03	05/31/03
SELENIUM, TOTAL	005	S	03L0284	04/29/03	05/22/03	05/31/03

B16W90

SILVER, TOTAL	006	S	03L0284	04/28/03	05/22/03	05/31/03
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Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2194

DATE RECEIVED: 05/02/03

LVL LOT # :0305L329

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
ARSENIC, TOTAL	006	S	03L0284	04/28/03	05/22/03	05/31/03
BORON, TOTAL	006	S	03L0284	04/28/03	05/22/03	05/31/03
BARIUM, TOTAL	006	S	03L0284	04/28/03	05/22/03	05/31/03
BERYLLIUM, TOTAL	006	S	03L0284	04/28/03	05/22/03	05/31/03
BISMUTH, TOTAL	006	S	03L0284	04/28/03	05/22/03	05/31/03
CADMIUM, TOTAL	006	S	03L0284	04/28/03	05/22/03	05/31/03
CHROMIUM, TOTAL	006	S	03L0284	04/28/03	05/22/03	05/31/03
COPPER, TOTAL	006	S	03L0284	04/28/03	05/22/03	05/31/03
MERCURY, TOTAL	006	S	03C0115	04/28/03	05/16/03	05/19/03
NICKEL, TOTAL	006	S	03L0284	04/28/03	05/22/03	05/31/03
LEAD, TOTAL	006	S	03L0284	04/28/03	05/22/03	05/31/03
ANTIMONY, TOTAL	006	S	03L0284	04/28/03	05/22/03	05/31/03
SELENIUM, TOTAL	006	S	03L0284	04/28/03	05/22/03	05/31/03

LAB QC:

SILVER LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
SILVER, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
ARSENIC LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
ARSENIC, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
BORON LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
BORON, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
BARIUM LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
BARIUM, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
BERYLLIUM LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
BERYLLIUM, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
BISMUTH, LCS	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
BISMUTH, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
CADMIUM LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
CADMIUM, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
CHROMIUM LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
CHROMIUM, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
COPPER LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
COPPER, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
MERCURY LABORATORY	LC1 BS	S	03C0115	N/A	05/16/03	05/19/03
MERCURY, TOTAL	MB1	S	03C0115	N/A	05/16/03	05/19/03
NICKEL LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
NICKEL, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2194

DATE RECEIVED: 05/02/03

LVL LOT # :0305L329

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
LEAD LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
LEAD, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
ANTIMONY LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
ANTIMONY, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
SELENIUM LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
SELENIUM, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03



Analytical Report

Client: TNU-HANFORD F03-006
LVL#: 0305L329
SDG/SAF#: H2194/F03-006

W.O.#: 11343-606-001-9999-00
Date Received: 05-02-03

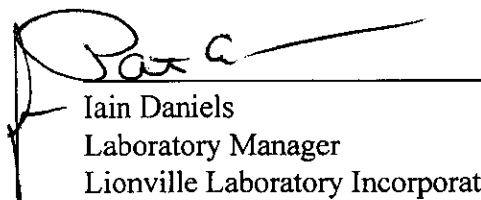
METALS CASE NARRATIVE

1. This narrative covers the analyses of 6 soil samples.
2. The samples were prepared and analyzed in accordance with methods checked on the attached glossary.
3. All analyses were performed within the required holding times.
4. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits.
6. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the PQL).
7. All preparation/method blanks (MB) were within method criteria {less than the Practical Quantitation Limit (3X the IDL), MB value less than 5% of the RCRA limit, or samples greater than 20X MB value}. Refer to the Inorganics Method Blank Data Summary.
8. All ICP Interference Check Standards were within control limits.
9. All laboratory control samples (LCS) were within the 80-120% control limits. Refer to the Inorganics Laboratory Control Standards Report.
10. The matrix spike (MS) recoveries for 2 analytes were outside the 75-125% control limits. Refer to the Inorganics Accuracy Report.
11. For analytes where the ICP MS is out-of-control, a post-digestion MS (PDS) and serial dilution are performed. A serial dilution is performed for Mercury. A PDS was prepared at meaningful concentration level for the following analytes:

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of **28** pages.

<u>Sample ID</u>	<u>Element</u>	<u>PDS</u> <u>Concentration (ppb)</u>	<u>PDS</u> <u>% Recovery</u>
B16W79	Antimony	100	102.1
	Barium	200	37.7

12. The duplicate analyses for 3 analytes were outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.
13. For the purposes of this report, the data has been reported to the Instrument Detection Limit (IDL). Values between the IDL and the Practical Quantitation Limit (PQL) are acquired in a region of less-certain quantification.
14. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.


 Iain Daniels
 Laboratory Manager
 Lionville Laboratory Incorporated

gmb/m05-329

06-05-03
 Date

METALS METHOD GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within this

Lot#: 03052329

Leaching Procedure: 1310 1311 1312 Other:

CLP Metals Digestion and Analysis Methods: ILM03.0 ILM04.0

Metals Digestion Methods: 3005A 3010A 3015 3020A 3050B 3051 200.7 SS17
Other:

Metals Analysis Methods

	SW846	EPA	STD MTD	EPA OSWR	USATHAMA
Aluminum	6010B	200.7			99
Antimony	6010B 7041 ^s	200.7 204.2			99
Arsenic	6010B 7060A ^s	200.7 206.2	3113B		99
Barium	6010B	200.7			99
Beryllium	6010B	200.7			99
Bismuth	6010B ¹	200.7 ¹		1620	99
Boron	6010B	200.7			99
Cadmium	6010B 7131A ^s	200.7 213.2			99
Calcium	6010B	200.7			99
Chromium	6010B 7191 ^s	200.7 218.2			SS17
Cobalt	6010B	200.7			99
Copper	6010B 7211 ^s	200.7 220.2			99
Iron	6010B	200.7			99
Lead	6010B 7421 ^s	200.7 239.2	3113B		99
Lithium	6010B 7430 ⁴	200.7		1620	99
Magnesium	6010B	200.7			99
Manganese	6010B	200.7			99
Mercury	7470A ^s 7471A ^s	245.1 ² 245.5 ²			99
Molybdenum	6010B	200.7			99
Nickel	6010B	200.7			99
Potassium	6010B 7610 ⁴	200.7 258.1 ⁴			99
Rare Earths	6010B ¹	200.7 ¹		1620	99
Selenium	6010B 7740 ^s	200.7 270.2	3113B		99
Silicon	6010B ¹	200.7		1620	99
Silica	6010B	200.7		1620	99
Silver	6010B 7761 ^s	200.7 272.2			99
Sodium	6010B 7770 ⁴	200.7 273.1 ⁴			99
Strontium	6010B	200.7			99
Thallium	6010B 7841 ^s	200.7 279.2 200.9			99
Tin	6010B	200.7			99
Titanium	6010B	200.7			99
Uranium	6010B ¹	200.7 ¹		1620	99
Vanadium	6010B	200.7			99
Zinc	6010B	200.7			99
Zirconium	6010B ¹	200.7 ¹		1620	99

Other: _____

Method: _____

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.

* = Indicates that the original sample result is greater than 4x the spike amount added.

ABBREVIATIONS

MB = Method or Preparation Blank.

MS = Matrix Spike.

MSD = Matrix Spike Duplicate.

REP = Sample Replicate

LCS = Laboratory Control Sample.

NC = Not calculated.

ANALYTICAL METAL METHODS

1. Not included in the method element list.
2. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, approximately 0.3 grams of sample is taken to a final volume of 50 mL (including all reagents).
3. Flame AA.
4. Graphite Furnace AA.

L-WI-033/N-04/98

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 06/04/03

CLIENT: TNUHANFORD F03-006 H2194

LVL LOT #: 0305L329

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-----	-----	-----	-----	-----	-----	-----
-001	B16W79	Silver, Total	0.13 u	MG/KG	0.13	1.0
		Arsenic, Total	1.7	MG/KG	0.34	1.0
		Boron, Total	0.51	MG/KG	0.20	1.0
		Barium, Total	165	MG/KG	0.02	1.0
		Beryllium, Total	0.31	MG/KG	0.01	1.0
		Bismuth, Total	0.53 u	MG/KG	0.53	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Chromium, Total	8.5	MG/KG	0.10	1.0
		Copper, Total	14.6	MG/KG	0.06	1.0
		Mercury, Total	0.02	MG/KG	0.02	1.0
		Nickel, Total	11.0	MG/KG	0.14	1.0
		Lead, Total	3.9	MG/KG	0.24	1.0
		Antimony, Total	0.23 u	MG/KG	0.23	1.0
		Selenium, Total	0.44 u	MG/KG	0.44	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 06/04/03

CLIENT: TNUHANFORD F03-006 H2194
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0305L329

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
=====	=====	=====	=====	=====	=====	=====
-002	B16W80	Silver, Total	0.12 u	MG/KG	0.12	1.0
		Arsenic, Total	2.2	MG/KG	0.34	1.0
		Boron, Total	0.58	MG/KG	0.19	1.0
		Barium, Total	86.8	MG/KG	0.02	1.0
		Beryllium, Total	0.18	MG/KG	0.01	1.0
		Bismuth, Total	0.52 u	MG/KG	0.52	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Chromium, Total	6.1	MG/KG	0.10	1.0
		Copper, Total	13.3	MG/KG	0.06	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Nickel, Total	7.8	MG/KG	0.13	1.0
		Lead, Total	3.0	MG/KG	0.24	1.0
		Antimony, Total	0.23 u	MG/KG	0.23	1.0
		Selenium, Total	0.43 u	MG/KG	0.43	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 06/04/03

CLIENT: TNUHANFORD F03-006 H2194

LVL LOT #: 0305L329

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
*****	*****	*****	*****	*****	*****	*****
-003	B16W81	Silver, Total	0.12 u	MG/KG	0.12	1.0
		Arsenic, Total	2.2	MG/KG	0.32	1.0
		Boron, Total	0.36	MG/KG	0.19	1.0
		Barium, Total	76.2	MG/KG	0.02	1.0
		Beryllium, Total	0.21	MG/KG	0.01	1.0
		Bismuth, Total	0.50 u	MG/KG	0.50	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Chromium, Total	7.1	MG/KG	0.1	1.0
		Copper, Total	12.0	MG/KG	0.06	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Nickel, Total	7.8	MG/KG	0.13	1.0
		Lead, Total	2.9	MG/KG	0.23	1.0
		Antimony, Total	0.22 u	MG/KG	0.22	1.0
		Selenium, Total	0.41 u	MG/KG	0.41	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 06/04/03

CLIENT: TNUHANFORD F03-006 H2194

LVL LOT #: 0305L329

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
*****	*****	*****	*****	*****	*****	*****
-004	B16W82	Silver, Total	0.12 u	MG/KG	0.12	1.0
		Arsenic, Total	1.9	MG/KG	0.34	1.0
		Boron, Total	0.36	MG/KG	0.20	1.0
		Barium, Total	78.5	MG/KG	0.02	1.0
		Beryllium, Total	0.15	MG/KG	0.01	1.0
		Bismuth, Total	0.52 u	MG/KG	0.52	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Chromium, Total	4.6	MG/KG	0.10	1.0
		Copper, Total	13.8	MG/KG	0.06	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Nickel, Total	6.8	MG/KG	0.13	1.0
		Lead, Total	2.7	MG/KG	0.24	1.0
		Antimony, Total	0.23 u	MG/KG	0.23	1.0
		Selenium, Total	0.43 u	MG/KG	0.43	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 06/04/03

CLIENT: TNUHANFORD F03-006 H2194

LVL LOT #: 0305L329

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
*****	*****	*****	*****	*****	*****	*****
-005	B16W83	Silver, Total	0.12 u	MG/KG	0.12	1.0
		Arsenic, Total	2.4	MG/KG	0.34	1.0
		Boron, Total	0.50	MG/KG	0.19	1.0
		Barium, Total	79.6	MG/KG	0.02	1.0
		Beryllium, Total	0.14	MG/KG	0.01	1.0
		Bismuth, Total	0.52 u	MG/KG	0.52	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Chromium, Total	7.0	MG/KG	0.10	1.0
		Copper, Total	14.5	MG/KG	0.06	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Nickel, Total	7.0	MG/KG	0.13	1.0
		Lead, Total	2.5	MG/KG	0.24	1.0
		Antimony, Total	0.23 u	MG/KG	0.23	1.0
		Selenium, Total	0.43 u	MG/KG	0.43	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 06/04/03

CLIENT: TNUHANFORD P03-006 H2194

LVL LOT #: 0305L329

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
=====	=====	=====	=====	=====	=====	=====
-006	B16W90	Silver, Total	0.12 u	MG/KG	0.12	1.0
		Arsenic, Total	1.9	MG/KG	0.34	1.0
		Boron, Total	0.42	MG/KG	0.20	1.0
		Barium, Total	74.9	MG/KG	0.02	1.0
		Beryllium, Total	0.17	MG/KG	0.01	1.0
		Bismuth, Total	0.53 u	MG/KG	0.53	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Chromium, Total	6.2	MG/KG	0.10	1.0
		Copper, Total	12.8	MG/KG	0.06	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Nickel, Total	7.6	MG/KG	0.13	1.0
		Lead, Total	2.9	MG/KG	0.24	1.0
		Antimony, Total	0.23 u	MG/KG	0.23	1.0
		Selenium, Total	0.43 u	MG/KG	0.43	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 06/04/03

CLIENT: TNUHANFORD F03-006 H2194

LVL LOT #: 0305L329

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
=====	=====	=====	=====	=====	=====	=====
BLANK1	03L0284-MB1	Silver, Total	0.12 u	MG/KG	0.12	1.0
		Arsenic, Total	0.33 u	MG/KG	0.33	1.0
		Boron, Total	0.19 u	MG/KG	0.19	1.0
		Barium, Total	0.03	MG/KG	0.02	1.0
		Beryllium, Total	0.02	MG/KG	0.01	1.0
		Bismuth, Total	0.51 u	MG/KG	0.51	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Chromium, Total	0.10 u	MG/KG	0.10	1.0
		Copper, Total	0.06 u	MG/KG	0.06	1.0
		Nickel, Total	0.13 u	MG/KG	0.13	1.0
		Lead, Total	0.23 u	MG/KG	0.23	1.0
		Antimony, Total	0.22 u	MG/KG	0.22	1.0
		Selenium, Total	0.42 u	MG/KG	0.42	1.0
BLANK1	03C0115-MB1	Mercury, Total	0.02 u	MG/KG	0.02	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 06/04/03

CLIENT: TNUHANFORD F03-006 H2194
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0305L329

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
=====	=====	=====	=====	=====	=====	=====	=====
-001	B16W79	Silver, Total	4.9	0.13u	5.2	94.2	1.0
		Arsenic, Total	192	1.7	209	91.2	1.0
		Boron, Total	93.8	0.51	104	89.4	1.0
		Barium, Total	299	165	209	64.1	1.0
		Beryllium, Total	5.2	0.31	5.2	94.0	1.0
		Bismuth, Total	479	0.53u	522	91.7	1.0
		Cadmium, Total	4.7	0.04u	5.2	90.4	1.0
		Chromium, Total	28.2	8.5	20.9	94.3	1.0
		Copper, Total	39.3	14.6	26.1	94.6	1.0
		Mercury, Total	0.21	0.02	0.17	116.9	1.0
		Nickel, Total	59.5	11.0	52.2	92.9	1.0
		Lead, Total	52.4	3.9	52.2	92.9	1.0
		Antimony, Total	30.3	0.23u	52.2	58.0	1.0
		Selenium, Total	181	0.44u	209	86.6	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 06/04/03

CLIENT: TNUHANFORD F03-006 H2194

LVL LOT #: 0305L329

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	INITIAL			DILUTION
			RESULT	REPLICATE RPD		FACTOR (REP)
=====	=====	=====	=====	=====	=====	=====
-001REP	B16W79	Silver, Total	0.13u	0.13u	NC	1.0
		Arsenic, Total	1.7	2.2	25.6	1.0
		Boron, Total	0.51	0.44	14.6	1.0
		Barium, Total	165	100	48.4	1.0
		Beryllium, Total	0.31	0.31	0.67	1.0
		Bismuth, Total	0.53u	0.53u	NC	1.0
		Cadmium, Total	0.04u	0.04u	NC	1.0
		Chromium, Total	8.5	12.3	36.5	1.0
		Copper, Total	14.6	13.9	4.9	1.0
		Mercury, Total	0.02	0.02	0.00	1.0
		Nickel, Total	11.0	12.1	9.5	1.0
		Lead, Total	3.9	3.9	0.00	1.0
		Antimony, Total	0.23u	0.23u	NC	1.0
		Selenium, Total	0.44u	0.44u	NC	1.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 06/04/03

CLIENT: TNUHANFORD F03-006 H2194
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0305L329

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
=====	=====	=====	=====	=====	=====	=====
LCS1	03L0284-LC1	Silver, LCS	49.1	50.0	MG/KG	98.2
		Arsenic, LCS	931	1000	MG/KG	93.1
		Boron, LCS	471	500	MG/KG	94.2
		Barium, LCS	505	500	MG/KG	100.9
		Beryllium, LCS	24.2	25.0	MG/KG	96.8
		Bismuth, LCS	491	500	MG/KG	98.2
		Cadmium, LCS	24.6	25.0	MG/KG	98.4
		Chromium, LCS	50.6	50.0	MG/KG	101.2
		Copper, LCS	127	125	MG/KG	101.8
		Nickel, LCS	200	200	MG/KG	99.9
		Lead, LCS	243	250	MG/KG	97.4
		Antimony, LCS	291	300	MG/KG	97.0
		Selenium, LCS	890	1000	MG/KG	89.0
LCS1	03C0115-LC1	Mercury, LCS	6.9	6.2	MG/KG	110.7

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS[illegible]

Special Instructions: Run Matrix QC
Saf # F03-0060

DATE/REVISIONS:

5-14-03 Per Client: Due Date = 6-16-03

Samples: $\bar{2}^{001} \rightarrow -006$ Add Ag, Al, B, Ba, Be, Bi, Cd, Cr, Cu,

3. Hg, Ni, Pb, Sb, Se / IC: Cl, F, NO₂, NO, As, S

4. INH3N, ICNTO, IPH, 0624H, 0625X, 06C5C.

5. OPCB, ODRD, OGRD

6

Lionville Laboratory Use Only

Samples were: ☒ 1) Shipped ☐ or Hand Delivered ☐

Airbill # 7-1111

2) Ambient or Chilled

3) Received in Good

Condition Y or N


4) Samples Properly Preserved

Properly Filled ☒ Y or N

5) Received Within

Holding Times Y or N

Tamper Resistant Seal was:

1) Present on Outer
Backpack  or N

2) Unbroken on Outer

Package Y or N

3) Present on Sample
(Y) or N

4) Unbroken on

Sample (Y) or N

COC Record Present

Upon Sample Rec't
(Y) or N

Cooler 13

Temp. 1.5 °C

Discrepancies Between
Samples Labels and
COC Record? Y or N

NOTES:

7915 8463 3324

ORIGINAL
REWRITTEN

**COMPOSITE
WASTE**

FH-Central Plateau Project			CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-62		Page 1 of 1		
Collector Johansen/Pope/Pfister			Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling			Sampling Location 216-A-37 (C4106); (12.5'-15')			SAF No. F03-006		Air Quality <input type="checkbox"/>				
Ice Chest No. ERC 96 05C			Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To RECRA EDERLINE SERVICES (Formerly TMA) 4/22/03			Offsite Property No. A030220				Bill of Lading/Air Bill No. SEE OSL					
Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None			
				Type of Container	aG	aG	aG	aG	aG			
				No. of Container(s)	1	1	1	1	1			
				Volume	120mL	60mL	120mL	60mL	60mL			
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions	Tritium - H3				
Sample No.	Matrix *	Sample Date	Sample Time									
B16W79	SOIL	4/28/03	1358	X	X	X						
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS 4/22/03				Matrix * S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Dry Solids DL=Dry Liquids T=Thane WI=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <i>Greg Thompson</i> 4/28/03		Date/Time 1645		Received By/Stored In REFIA 3728		Date/Time 42803 1645		<p>** The laboratory is to achieve a detection limit of 50.0 nCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis.</p> <p>(1) Technetium-99, Strontium-89,90 - Total Sr, Isotopic Thorium (Thorium-232), Carbon-14, Iodine-129, Nickel-63, Neptunium-237 4/22/03</p> <p>Personnel not available to relinquish samples from the 3728 Ref # 1A on 5.1.103</p>				
Relinquished By/Removed From REFIA 3728		Date/Time 5103 1100		Received By/Stored In SJGALEX		Date/Time 5103 1100						
Relinquished By/Removed From SJGALEX		Date/Time 5103 1100		Received By/Stored In FED EX		Date/Time						
Relinquished By/Removed From 6/20/03		Date/Time 5-2-03 0945		Received By/Stored In 2/2/03		Date/Time 5-2-03 0945						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
LABORATORY SECTION		Received By		Title				Date/Time				
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time				

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-63		Page 1 of 1		
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (17.5'-20')				SAF No. F03-006		Air Quality <input type="checkbox"/>			
Ice Chest No. ERC 96 056		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To RECPA EDERLINE SERVICES (Formerly TMA) 4/22/03		Offsite Property No. A030220				Bill of Lading/Air Bill No. SOE 03PC					
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None		
				Type of Container	aG	aG	aG	aG	aG		
				No. of Container(s)	1	1	1	1	1		
				Volume	120mL	60mL	120mL	60mL	60mL		
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions AS 4/22/03	Tritium - H3			
Sample No.	Matrix *	Sample Date	Sample Time								
B16W80	SOIL	4/28/03	1510	X	X	X					
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS			
Relinquished By/Removed From Greg Thomas		Date/Time 4/22/03		Received By/Stored In REF IA 3728		Date/Time 4/28/03		** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. (1) Technetium-99; Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237 Personnel not available to relinquish samples from the 3728 Ref # 1A on 5/1/03			
Relinquished By/Removed From REF IA 3728		Date/Time 5/1/03		Received By/Stored In SJGALE		Date/Time 5/1/03					
Relinquished By/Removed From SJGALE		Date/Time 5/1/03		Received By/Stored In FED EX		Date/Time					
Relinquished By/Removed From 6/20/03		Date/Time 5-2-03		Received By/Stored In 5/2/03		Date/Time 0945					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
LABORATORY SECTION		Received By		Title				Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time			

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FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-65		Page 1 of 1		
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (37.5'-40')				SAF No. F03-006		Air Quality <input type="checkbox"/>			
Ice Chest No. ERC 9.6 055		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To REERA 15m EDERLINE SERVICES (Formerly TMA) 4/22/03		Offsite Property No. A030220				Bill of Lading/Air Bill No. 568 08PC					
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None		
				Type of Container	aG	aG	aG	aG	aG		
				No. of Container(s)	1	1	1	1	1		
				Volume	120mL	60mL	120mL	60mL	60mL		
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) - Special Instructions 4/22/03	Tritium - H3			
Sample No.	Matrix *	Sample Date	Sample Time								
B16W82	SOIL	4/29/03	0900	X	X	X	X				B16W48 (W5CF)
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		**The laboratory is to achieve a detection limit of 30.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. (4) Technetium-99; Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237 75m 4/22/03 Personnel not available to relinquish samples from the 3728 Ref # 10 on 5/1/03			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		Matrix * S=Soil SE=Seaweed SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
LABORATORY SECTION		Received By		Title				Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time			

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						F03-006-66	Page 1 of 1	
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N	Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (47.5°-50°)		SAF No. F03-006		Air Quality <input type="checkbox"/>				
Ice Chest No. ERC 96 056		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express				
Shipped To TEBERLINE SERVICES (Formerly TMA) per 4/14/03		Offsite Property No. A030220		Bill of Lading/Air Bill No. SEE OSC						
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage		Preservation	Cool 4C	Cool 4C	Cool 4C	None	None			
		Type of Container	aG	aG	aG	aG	aG			
		No. of Container(s)	1	1	1	1	1			
		Volume	120mL	60mL	120mL	60mL	60mL			
SAMPLE ANALYSIS		Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions	Tritium - HD				
Sample No.	Matrix *	Sample Date	Sample Time							
B16W83	SOIL	4/24/03	1020	X	X	X	/		B16W83 (W5CF)	
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS		Matrix *
Relinquished By/Removed From M. Johansen per 4/24/03		Date/Time 4/24/03 1400	Received By/Stored In R. F. GALE		Date/Time 4/24/03 1400		** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis.		S=Soil SE=Soil/Sediment SQ=Solid SL=Sludge W = Water O=Oil A=Air DS=Drum Solids DL=Drum Liquid T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other	
Relinquished By/Removed From R. F. GALE		Date/Time 4-29-03	Received By/Stored In IB		Date/Time 4-29-03		(1)-Technetium-99; Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237			
Relinquished By/Removed From IB 3728		Date/Time 5-1-03 1100	Received By/Stored In S. J. GALE		Date/Time 5-1-03 1100		Personnel not available to relinquish samples from the 3728 Ref # 1B on 5-1-03			
Relinquished By/Removed From S. J. GALE		Date/Time 5-1-03 1100	Received By/Stored In FED EX		Date/Time					
Relinquished By/Removed From D. Smith		Date/Time 5-2-03 0945	Received By/Stored In D. Smith		Date/Time 5-2-03 0945					
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time					
LABORATORY SECTION		Received By		Title		Date/Time				
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time				

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-73		Page 1 of 1		
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (17.5'-20')		SAF No. F03-006		Air Quality <input type="checkbox"/>					
Ice Chest No. ERC 96 056		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To REERA 4/22/03 EDERLINE SERVICES (Formerly TMA)		Offsite Property No. A030220				Bill of Lading/Air Bill No. 385 03PC					
Special Handling and/or Storage		Preservation		Cool 4C	Cool 4C	Cool 4C	None	None			
		Type of Container		aG	aG	aG	aG	aG			
		No. of Container(s)		1	1	1	1	1			
		Volume		120mL	60mL	120mL	60mL	60mL			
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions 4/22/03	Tritium - H3			
Sample No.	Matrix *	Sample Date	Sample Time								
B16W90	SOIL	4/28/03	1510	X	X	X					
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>4/22/03</p> <p>** The laboratory is to achieve a detection limit of 30.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis.</p> <p>(1) Technetium-99, Strontium-90,90 - Total Sr, Isotopic Thorium (Thorium-232), Carbon-14, Iodine-129, Nickel-63, Neptunium-237 4/22/03</p> <p>Personnel not available to relinquish samples from the 3728 Ref # LA on 511103</p>			
Greg Johansen 4/28/03		1645		REF 1A 3728 42803 1645							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
REF 1A 3728 5103 1100		5103 1100		JUGALCO/ALR 5103 1100							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
J. Scales 4/28/03		5103 1100		FED EX							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Gled E 5-2-03 0945		5-2-03 0945		J. Scales 5-2-03 0945							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
LABORATORY SECTION		Received By		Title				Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time			

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-006-74		Page 1 of 1										
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N Data Turnaround 45 Days										
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (0.5')		SAF No. F03-006		Air Quality <input type="checkbox"/>												
Ice Chest No. ERC 96 056		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express												
Shipped To MS103 REERA EDERLINE SERVICES (Formerly TMA)		Offsite Property No. A030 220		Bill of Lading/Air Bill No. SEE 05PC														
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C												
				Type of Container	aG	aG												
				No. of Container(s)	1	1												
				Volume	60mL	250mL												
SAMPLE ANALYSIS				Pesticides - 8081	Chloro- Herbicides - EPA8151													
Sample No.	Matrix *	Sample Date	Sample Time															
B16W91	SOIL	4/28/03	130	X	X													
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		Personnel not available to relinquish samples from the 3728 Ref # <u>1A</u> on <u>5/11/03</u>				S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Trace WJ=Wipe L=Liquid V=Vegetation X=Other						
<i>Greg Thomas</i>		4/28/03		REF 1A 3728		4/28/03 1645												
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time												
REF 1A 3728		5103 1100		SDGALV		5/10/03 1100												
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time												
S. GALV		5/10/03 1100		FED EX														
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time												
<i>Shed Ex</i>		5-2-03 0945		<i>[Signature]</i>		5-2-03 0945												
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time												
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time												
LABORATORY SECTION		Received By		Title		Date/Time												
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time												

LIONVILLE LABORATORY INCORPORATED SAMPLE RECEIPT CHECKLIST

IENT: TNU Hamford

chase Order/Project:

DATE: 5-2-03

FF# / SOW# / Release #: F03-006

laboratory SDG #:

0305L329

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

- | | | | | |
|--|---|-----------------------------|---|--|
| 1. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 2. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 3. Airbill # recorded? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 5. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 7. All samples on coc received? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 8. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 10. Shipment meets LVL1 Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 11. Where applicable, bar code labels are affixed to coc? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 12. coc signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 13. coc will be faxed or emailed to client? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 14. Project Manager/Client contacted concerning discrepancies? (name/date) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |

Cooler # / temp (°C) and Comments:

EEC 96-056 / 1.3°C

Laboratory Sample Custodian:

Laboratory Project Manager:

[Signature]

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2194



DATE RECEIVED: 05/02/03

LVL LOT # :0305L329

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B16W79						
% SOLIDS	001	S	03L*S061	04/28/03	05/05/03	05/06/03
CHLORIDE BY IC	001	S	03LICA31	04/28/03	05/16/03	05/16/03
CHLORIDE BY IC	001 REP	S	03LICA31	04/28/03	05/16/03	05/16/03
CHLORIDE BY IC	001 MS	S	03LICA31	04/28/03	05/16/03	05/16/03
FLUORIDE BY IC	001	S	03LICA31	04/28/03	05/16/03	05/16/03
FLUORIDE BY IC	001 REP	S	03LICA31	04/28/03	05/16/03	05/16/03
FLUORIDE BY IC	001 MS	S	03LICA31	04/28/03	05/16/03	05/16/03
NITRITE BY IC	001	S	03LICA31	04/28/03	05/16/03	05/16/03
NITRITE BY IC	001 REP	S	03LICA31	04/28/03	05/16/03	05/16/03
NITRITE BY IC	001 MS	S	03LICA31	04/28/03	05/16/03	05/16/03
NITRATE BY IC	001	S	03LICA31	04/28/03	05/16/03	05/16/03
NITRATE BY IC	001 REP	S	03LICA31	04/28/03	05/16/03	05/16/03
NITRATE BY IC	001 MS	S	03LICA31	04/28/03	05/16/03	05/16/03
TOTAL CYANIDE	001	S	03LC046	04/28/03	05/21/03	05/21/03
TOTAL CYANIDE	001 REP	S	03LC046	04/28/03	05/21/03	05/21/03
TOTAL CYANIDE	001 MS	S	03LC046	04/28/03	05/21/03	05/21/03
PHOSPHATE BY IC	001	S	03LICA31	04/28/03	05/16/03	05/16/03
PHOSPHATE BY IC	001 REP	S	03LICA31	04/28/03	05/16/03	05/16/03
PHOSPHATE BY IC	001 MS	S	03LICA31	04/28/03	05/16/03	05/16/03
CHROMIUM VI	001	S	03LVI041	04/28/03	05/07/03	05/07/03
CHROMIUM VI	001 MS	S	03LVI041	04/28/03	05/07/03	05/07/03
CHROMIUM VI	001 MSD	S	03LVI041	04/28/03	05/07/03	05/07/03
SULFATE BY IC	001	S	03LICA31	04/28/03	05/16/03	05/16/03
SULFATE BY IC	001 REP	S	03LICA31	04/28/03	05/16/03	05/16/03
SULFATE BY IC	001 MS	S	03LICA31	04/28/03	05/16/03	05/16/03
NITRATE NITRITE	001	S	03LN3A27	04/28/03	05/22/03	05/22/03
AMMONIA	001	S	03LAMA14	04/28/03	05/24/03	05/26/03
OIL & GREASE BY GRAV	001	S	03LOG023	04/28/03	06/04/03	06/05/03
PH	001	S	03LPH035	04/28/03	05/20/03	05/20/03
PH	001 REP	S	03LPH035	04/28/03	05/20/03	05/20/03

B16W80

% SOLIDS	002	S	03L*S061	04/28/03	05/05/03	05/06/03
CHLORIDE BY IC	002	S	03LICA31	04/28/03	05/16/03	05/16/03

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2194

DATE RECEIVED: 05/02/03

LVL LOT # :0305L329

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
FLUORIDE BY IC	002	S	03LICA31	04/28/03	05/16/03	05/16/03
NITRITE BY IC	002	S	03LICA31	04/28/03	05/16/03	05/16/03
NITRATE BY IC	002	S	03LICA31	04/28/03	05/16/03	05/16/03
TOTAL CYANIDE	002	S	03LC046	04/28/03	05/21/03	05/21/03
PHOSPHATE BY IC	002	S	03LICA31	04/28/03	05/16/03	05/16/03
CHROMIUM VI	002	S	03LVI041	04/28/03	05/07/03	05/07/03
SULFATE BY IC	002	S	03LICA31	04/28/03	05/16/03	05/16/03
NITRATE NITRITE	002	S	03LN3A27	04/28/03	05/22/03	05/22/03
AMMONIA	002	S	03LAMA14	04/28/03	05/24/03	05/26/03
OIL & GREASE BY GRAV	002	S	03LOG023	04/28/03	06/04/03	06/05/03
PH	002	S	03LPH035	04/28/03	05/20/03	05/20/03

B16W81

% SOLIDS	003	S	03L&S061	04/29/03	05/05/03	05/06/03
CHLORIDE BY IC	003	S	03LICA31	04/29/03	05/16/03	05/16/03
FLUORIDE BY IC	003	S	03LICA31	04/29/03	05/16/03	05/16/03
NITRITE BY IC	003	S	03LICA31	04/29/03	05/16/03	05/16/03
NITRATE BY IC	003	S	03LICA31	04/29/03	05/16/03	05/16/03
TOTAL CYANIDE	003	S	03LC046	04/29/03	05/21/03	05/21/03
PHOSPHATE BY IC	003	S	03LICA31	04/29/03	05/16/03	05/16/03
CHROMIUM VI	003	S	03LVI041	04/29/03	05/07/03	05/07/03
SULFATE BY IC	003	S	03LICA31	04/29/03	05/16/03	05/16/03
NITRATE NITRITE	003	S	03LN3A27	04/29/03	05/22/03	05/22/03
NITRATE NITRITE	003 REP	S	03LN3A27	04/29/03	05/22/03	05/22/03
NITRATE NITRITE	003 MS	S	03LN3A27	04/29/03	05/22/03	05/22/03
AMMONIA	003	S	03LAMA14	04/29/03	05/24/03	05/26/03
OIL & GREASE BY GRAV	003	S	03LOG023	04/29/03	06/04/03	06/05/03
PH	003	S	03LPH035	04/29/03	05/20/03	05/20/03

B16W82

% SOLIDS	004	S	03L&S061	04/29/03	05/05/03	05/06/03
CHLORIDE BY IC	004	S	03LICA31	04/29/03	05/16/03	05/16/03
FLUORIDE BY IC	004	S	03LICA31	04/29/03	05/16/03	05/16/03
NITRITE BY IC	004	S	03LICA31	04/29/03	05/16/03	05/16/03
NITRATE BY IC	004	S	03LICA31	04/29/03	05/16/03	05/16/03
TOTAL CYANIDE	004	S	03LC046	04/29/03	05/21/03	05/21/03

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2194

DATE RECEIVED: 05/02/03

LVL LOT # :0305L329

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
PHOSPHATE BY IC	004	S	03LICA31	04/29/03	05/16/03	05/16/03
CHROMIUM VI	004	S	03LVI041	04/29/03	05/07/03	05/07/03
SULFATE BY IC	004	S	03LICA31	04/29/03	05/16/03	05/16/03
NITRATE NITRITE	004	S	03LN3A27	04/29/03	05/22/03	05/22/03
AMMONIA	004	S	03LAMA14	04/29/03	05/24/03	05/26/03
OIL & GREASE BY GRAV	004	S	03LOG023	04/29/03	06/04/03	06/05/03
PH	004	S	03LPH035	04/29/03	05/20/03	05/20/03

B16W83

% SOLIDS	005	S	03L*S061	04/29/03	05/05/03	05/06/03
CHLORIDE BY IC	005	S	03LICA31	04/29/03	05/16/03	05/16/03
FLUORIDE BY IC	005	S	03LICA31	04/29/03	05/16/03	05/16/03
NITRITE BY IC	005	S	03LICA31	04/29/03	05/16/03	05/16/03
NITRATE BY IC	005	S	03LICA31	04/29/03	05/16/03	05/16/03
TOTAL CYANIDE	005	S	03LC046	04/29/03	05/21/03	05/21/03
PHOSPHATE BY IC	005	S	03LICA31	04/29/03	05/16/03	05/16/03
CHROMIUM VI	005	S	03LVI041	04/29/03	05/07/03	05/07/03
SULFATE BY IC	005	S	03LICA31	04/29/03	05/16/03	05/16/03
NITRATE NITRITE	005	S	03LN3A27	04/29/03	05/22/03	05/22/03
AMMONIA	005	S	03LAMA14	04/29/03	05/24/03	05/26/03
OIL & GREASE BY GRAV	005	S	03LOG023	04/29/03	06/04/03	06/05/03
PH	005	S	03LPH035	04/29/03	05/20/03	05/20/03

B16W90

% SOLIDS	006	S	03L*S061	04/28/03	05/05/03	05/06/03
CHLORIDE BY IC	006	S	03LICA31	04/28/03	05/16/03	05/16/03
FLUORIDE BY IC	006	S	03LICA31	04/28/03	05/16/03	05/16/03
NITRITE BY IC	006	S	03LICA31	04/28/03	05/16/03	05/16/03
NITRATE BY IC	006	S	03LICA31	04/28/03	05/16/03	05/16/03
TOTAL CYANIDE	006	S	03LC046	04/28/03	05/21/03	05/21/03
PHOSPHATE BY IC	006	S	03LICA31	04/28/03	05/16/03	05/16/03
CHROMIUM VI	006	S	03LVI041	04/28/03	05/07/03	05/07/03
SULFATE BY IC	006	S	03LICA31	04/28/03	05/16/03	05/16/03
NITRATE NITRITE	006	S	03LN3A27	04/28/03	05/22/03	05/22/03
AMMONIA	006	S	03LAMA14	04/28/03	05/24/03	05/26/03
AMMONIA	006 REP	S	03LAMA14	04/28/03	05/24/03	05/26/03

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2194

DATE RECEIVED: 05/02/03

LVL LOT # :0305L329

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
AMMONIA	006 MS	S	03LAMA14	04/28/03	05/24/03	05/26/03
OIL & GREASE BY GRAV	006	S	03LOG024	04/28/03	06/05/03	06/06/03
OIL AND GREASE BY GR	006 REP	S	03LOG024	04/28/03	06/05/03	06/06/03
OIL AND GREASE BY GR	006 MS	S	03LOG024	04/28/03	06/05/03	06/06/03
PH	006	S	03LPH035	04/28/03	05/20/03	05/20/03

B16W91

% SOLIDS	007	S	03L%S061	04/28/03	05/05/03	05/06/03
% SOLIDS	007 REP	S	03L%S061	04/28/03	05/05/03	05/06/03

LAB QC:

CHLORIDE BY IC	MB1	S	03LICA31	N/A	05/16/03	05/16/03
CHLORIDE BY IC	MB1 BS	S	03LICA31	N/A	05/16/03	05/16/03
FLUORIDE BY IC	MB1	S	03LICA31	N/A	05/16/03	05/16/03
FLUORIDE BY IC	MB1 BS	S	03LICA31	N/A	05/16/03	05/16/03
NITRITE BY IC	MB1	S	03LICA31	N/A	05/16/03	05/16/03
NITRITE BY IC	MB1 BS	S	03LICA31	N/A	05/16/03	05/16/03
NITRATE BY IC	MB1	S	03LICA31	N/A	05/16/03	05/16/03
NITRATE BY IC	MB1 BS	S	03LICA31	N/A	05/16/03	05/16/03
TOTAL CYANIDE	LCS L	S	03LC046	N/A	05/21/03	05/21/03
TOTAL CYANIDE	LCS L	S	03LC046	N/A	05/21/03	05/21/03
TOTAL CYANIDE	MB1	S	03LC046	N/A	05/21/03	05/21/03
PHOSPHATE BY IC	MB1	S	03LICA31	N/A	05/16/03	05/16/03
PHOSPHATE BY IC	MB1 BS	S	03LICA31	N/A	05/16/03	05/16/03
CHROMIUM VI	MB1	S	03LVI041	N/A	05/07/03	05/07/03
CHROMIUM VI	MB1 BS	S	03LVI041	N/A	05/07/03	05/07/03
CHROMIUM VI	MB1 BSD	S	03LVI041	N/A	05/07/03	05/07/03
SULFATE BY IC	MB1	S	03LICA31	N/A	05/16/03	05/16/03
SULFATE BY IC	MB1 BS	S	03LICA31	N/A	05/16/03	05/16/03
NITRATE NITRITE	MB1	S	03LN3A27	N/A	05/22/03	05/22/03
NITRATE NITRITE	MB1 BS	S	03LN3A27	N/A	05/22/03	05/22/03
AMMONIA	MB1	S	03LAMA14	N/A	05/24/03	05/26/03
AMMONIA	MB1 BS	S	03LAMA14	N/A	05/24/03	05/26/03
AMMONIA	MB1 BSD	S	03LAMA14	N/A	05/24/03	05/26/03
OIL & GREASE BY GRAV	MB1	S	03LOG023	N/A	06/04/03	06/05/03
OIL AND GREASE BY GR	MB1 BS	S	03LOG023	N/A	06/04/03	06/05/03

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2194

DATE RECEIVED: 05/02/03

LVL LOT # :0305L329

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
OIL AND GREASE BY GR	MB1 BSD	S	03LOG023	N/A	06/04/03	06/05/03
OIL & GREASE BY GRAV	MB1	S	03LOG024	N/A	06/05/03	06/06/03
OIL AND GREASE BY GR	MB1 BS	S	03LOG024	N/A	06/05/03	06/06/03
OIL AND GREASE BY GR	MB1 BSD	S	03LOG024	N/A	06/05/03	06/06/03



Analytical Report

Client: TNU-HANFORD F03-006 H2194
LVL#: 0305L329

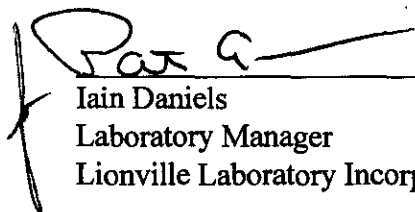
W.O.#: 11343-606-001-9999-00
Date Received: 05-02-03

INORGANIC NARRATIVE

1. This narrative covers the analyses of 7 soil samples.
2. The samples were prepared and analyzed in accordance with the methods indicated on the attached glossary.
3. The sample holding times as required by the method and/or contract were met with the exception of Total Cyanide samples as the request for analyses was past the sample holding times.
4. The results presented in this report are derived from samples that met LvLI's sample acceptance policy.
5. The method blanks were within the method criteria.
6. The Laboratory Control Samples (LCS) were within the laboratory control limits. The duplicate LCS for Ammonia and Oil and Grease were within the 20% Relative Percent Difference (RPD) control limit.
7. The matrix spike (MS) recoveries for Chloride, Fluoride, Nitrite, Nitrate, Total Cyanide, Chromium VI, Sulfate, Nitrate Nitrite, Ammonia and Oil and Grease were within the 75-125% control limits, however MS recovery for Phosphate was below the control limits at 71.5%.
8. The replicate analyses for Chloride, Fluoride, Nitrite, Nitrate, Total Cyanide, Phosphate, Sulfate, pH, Nitrate Nitrite, Ammonia, Oil and Grease and Percent Solids were within the 20% Relative Percent Difference (RPD) control limit.

The results presented in this report relate to the analytical testing and conditions of the samples upon receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 29 pages.

9. Results for solid samples are reported on a dry weight basis.
10. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard copy package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.


Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

06-06-03
Date

njp05-329

Lionville Laboratory Incorporated

WET CHEMISTRY

METHODS GLOSSARY FOR SOIL/SOLIDS SAMPLE ANALYSIS

	<u>ASTM</u>	<u>SW846</u>	<u>OTHER</u>
% Ash	— D2216-80		
% Moisture	— D2216-80		— ILMO4.0 (e)
% Solids	✓ D2216-80		— ILMO4.0 (e)
% Volatile Solids	— D2216-80		
ASTM Extraction in Water	— D3987-81/85		
BTU	— D240-87		
CEC		9081	— c
Chromium VI		✓ 3060A/7196A	
Corrosivity ___ by coupon ___ by pH		1110(mod) — 9045C	
Cyanide, Total		✓ 9010B/9014	— ILMO4.0 (e)
Cyanide, Reactive		Section 7.3/9014	
Halides, Extractable Organic		9020B	— EPA 600/4/84-008
Halides, Total		9020B	— EPA 600/4/84-008
EP Toxicity		1310A	
Flash Point		1010	
Ignitability		1010	
Oil & Grease		✓ 9071A	✓ 413.1 (mod.)
Carbon, Total Organic		9060	— Lloyd Kahn (mod)
Oxygen Bomb Prep for Anions	— D240-87(mod)	5050	
Petroleum Hydrocarbons, Total Recoverable		9071	— EPA 418.1
pH, Soil		✓ 9045C	
Sulfide, Reactive		Section 7.3/9030B	
Sulfide		9030B(mod)	
Specific Gravity	— D1429-76C/	— D5057-90	
Sulfur, Total		9056	
Synthetic Preparation Leach		1312	
Paint Filter		9095A	
Other: Chloride, Fluoride, Nitrite, } Method: EPA 300.0 (mod.)			
Other: Nitrate, Phosphate, Sulfate } Method			
Nitrate Nitrite		EPA 353.2 (mod.)	
Ammonia		EPA 350.3	

Lionville Laboratory Incorporated

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.

* = Indicates that the original sample result is greater than 4x the spike amount added.

ABBREVIATIONS

MB = Method or Preparation Blank.

MS = Matrix Spike.

MSD = Matrix Spike Duplicate.

REP = Sample Replicate

LC = Laboratory Control Sample.

NC = Not calculated.

A suffix of -R, -S, or -T following these codes indicate a replicate, spike or sample duplicate analysis respectively.

ANALYTICAL WET CHEMISTRY METHODS

1. ASTM Standard Methods.
2. USEPA Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020).
3. Test Methods for Evaluating Solid Waste (USEPA SW-846).
 - a. Standard Methods for the Examination of Water and Waste, 16 ed, (1983).
 - b. Standard Methods for the Examination of Water and Waste, 17 ed, (1989)/18ed (1992).
 - c. Method of Soil Analysis, Part 1, Physical and Mineralogical Methods, 2nd ed, (1986).
 - d. Method of Soil Analysis, Part 2, Chemical and Microbiological Properties, Am. Soc. Agron., Madison, WI (1965).
 - e. USEPA Contract Laboratory Program, Statement of Work for Inorganic Analysis.
 - f. Code of Federal Regulations.

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 06/06/03

CLIENT: TNUHANFORD F03-006 H2194
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0305L329

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-----	-----	-----	-----	-----	-----	-----
-001	B16W79	% Solids	93.9	%	0.01	1.0
		Chloride by IC	14.3	MG/KG	1.3	1.0
		Fluoride by IC	1.3	u MG/KG	1.3	1.0
		Nitrite by IC	1.33	u MG/KG	1.33	1.0
		Nitrate by IC	1710	MG/KG	133	100
		Cyanide, Total	0.40	u MG/KG	0.40	1.0
		Phosphate by IC	1.3	u MG/KG	1.3	1.0
		Chromium VI	0.43	u MG/KG	0.43	1.0
		Sulfate by IC	32.0	MG/KG	1.3	1.0
		Nitrate Nitrite	489	MG/KG	20.0	100
		Ammonia, as N	266	MG/KG	4.2	1.0
		Oil & Grease Gravimetri	710	u MG/KG	710	1.0
		pH	7.5	SOIL PH	0.01	1.0
-002	B16W80	% Solids	95.7	%	0.01	1.0
		Chloride by IC	1.3	u MG/KG	1.3	1.0
		Fluoride by IC	1.3	u MG/KG	1.3	1.0
		Nitrite by IC	1.31	u MG/KG	1.31	1.0
		Nitrate by IC	718	MG/KG	65.3	50.0
		Cyanide, Total	0.32	u MG/KG	0.32	1.0
		Phosphate by IC	1.3	u MG/KG	1.3	1.0
		Chromium VI	0.42	u MG/KG	0.42	1.0
		Sulfate by IC	1.7	MG/KG	1.3	1.0
		Nitrate Nitrite	163	MG/KG	10.3	50.0
		Ammonia, as N	9.0	MG/KG	4.6	1.0
		Oil & Grease Gravimetri	696	u MG/KG	696	1.0
		pH	7.9	SOIL PH	0.01	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 06/06/03

CLIENT: TNUHANFORD F03-006 H2194
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0305L329

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING	DILUTION
					LIMIT	FACTOR
-003	B16W81	‡ Solids	96.0	‡	0.01	1.0
		Chloride by IC	1.3	u MG/KG	1.3	1.0
		Fluoride by IC	1.3	u MG/KG	1.3	1.0
		Nitrite by IC	1.30	u MG/KG	1.30	1.0
		Nitrate by IC	18.4	MG/KG	1.30	1.0
		Cyanide, Total	0.31	u MG/KG	0.31	1.0
		Phosphate by IC	1.3	u MG/KG	1.3	1.0
		Chromium VI	0.42	u MG/KG	0.42	1.0
		Sulfate by IC	1.8	MG/KG	1.3	1.0
		Nitrate Nitrite	5.1	MG/KG	0.19	1.0
		Ammonia, as N	5.2	u MG/KG	5.2	1.0
		Oil & Grease Gravimetri	694	u MG/KG	694	1.0
		pH	8.6	SOIL PH	0.01	1.0
-004	B16W82	‡ Solids	94.4	‡	0.01	1.0
		Chloride by IC	1.3	u MG/KG	1.3	1.0
		Fluoride by IC	1.3	u MG/KG	1.3	1.0
		Nitrite by IC	1.32	u MG/KG	1.32	1.0
		Nitrate by IC	48.0	MG/KG	1.32	1.0
		Cyanide, Total	0.32	u MG/KG	0.32	1.0
		Phosphate by IC	1.3	u MG/KG	1.3	1.0
		Chromium VI	0.42	u MG/KG	0.42	1.0
		Sulfate by IC	2.1	MG/KG	1.3	1.0
		Nitrate Nitrite	10.5	MG/KG	0.42	2.0
		Ammonia, as N	44.2	MG/KG	4.3	1.0
		Oil & Grease Gravimetri	706	u MG/KG	706	1.0
		pH	8.5	SOIL PH	0.01	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 06/06/03

CLIENT: TNUHANFORD F03-006 H2194
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0305L329

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING	DILUTION
					LIMIT	
-----	-----	-----	-----	-----	-----	-----
-005	B16W83	% Solids	94.7	%	0.01	1.0
		Chloride by IC	1.3	u MG/KG	1.3	1.0
		Fluoride by IC	1.3	u MG/KG	1.3	1.0
		Nitrite by IC	1.32	u MG/KG	1.32	1.0
		Nitrate by IC	51.2	MG/KG	2.64	2.0
		Cyanide, Total	0.38	u MG/KG	0.38	1.0
		Phosphate by IC	1.3	u MG/KG	1.3	1.0
		Chromium VI	0.42	u MG/KG	0.42	1.0
		Sulfate by IC	2.1	MG/KG	1.3	1.0
		Nitrate Nitrite	13.4	MG/KG	0.42	2.0
		Ammonia, as N	4.3	u MG/KG	4.3	1.0
		Oil & Grease Gravimetri	704	u MG/KG	704	1.0
		pH	8.5	SOIL PH	0.01	1.0
-006	B16W90	% Solids	96.1	%	0.01	1.0
		Chloride by IC	1.3	u MG/KG	1.3	1.0
		Fluoride by IC	1.3	u MG/KG	1.3	1.0
		Nitrite by IC	1.30	u MG/KG	1.30	1.0
		Nitrate by IC	522	MG/KG	26.0	20.0
		Cyanide, Total	0.33	u MG/KG	0.33	1.0
		Phosphate by IC	1.3	u MG/KG	1.3	1.0
		Chromium VI	0.42	u MG/KG	0.42	1.0
		Sulfate by IC	1.6	MG/KG	1.3	1.0
		Nitrate Nitrite	143	MG/KG	3.7	20.0
		Ammonia, as N	4.7	u MG/KG	4.7	1.0
		Oil & Grease Gravimetri	694	u MG/KG	694	1.0
		pH	8.0	SOIL PH	0.01	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 06/06/03

CLIENT: TNUHANFORD F03-006 H2194
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0305L329

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-----	-----	-----	-----	-----	-----	-----
-007	B16W91	% Solids	92.4	%	0.01	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 06/06/03

CLIENT: TNUHANFORD F03-006 H2194
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0305L329

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-----	-----	-----	-----	-----	-----	-----
BLANK10	03LICA31-MB1	Chloride by IC	1.2	u MG/KG	1.2	1.0
		Fluoride by IC	1.2	u MG/KG	1.2	1.0
		Nitrite by IC	1.25	u MG/KG	1.25	1.0
		Nitrate by IC	1.25	u MG/KG	1.25	1.0
		Phosphate by IC	1.2	u MG/KG	1.2	1.0
		Sulfate by IC	1.2	u MG/KG	1.2	1.0
BLANK1	03LC046-MB1	Cyanide, Total	0.50	u MG/KG	0.50	1.0
BLANK10	03LVI041-MB1	Chromium VI	0.40	u MG/KG	0.40	1.0
BLANK10	03LN3A27-MB1	Nitrate Nitrite	0.20	u MG/KG	0.20	1.0
BLANK10	03LAMA14-MB1	Ammonia, as N	5.0	u MG/KG	5.0	1.0
BLANK10	03LOG023-MB1	Oil & Grease Gravimetri	667	u MG/KG	667	1.0
BLANK10	03LOG024-MB1	Oil & Grease Gravimetri	667	u MG/KG	667	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 06/06/03

CLIENT: TNUHANFORD F03-006 H2194

LVL LOT #: 0305L329

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
-----	-----	-----	-----	-----	-----	-----	-----
-001	B16W79	Chloride by IC	41.6	14.3	27.0	100.9	1.0
		Fluoride by IC	26.1	0.45	27.0	94.8	1.0
		Nitrite by IC	27.2	1.33u	27.0	100.6	1.0
		Nitrate by IC	7010	1710	5320	99.5	200
		Cyanide, Total	5.03	0.40u	5.30	95.0	1.0
		Phosphate by IC	19.3	1.3 u	27.0	71.5	1.0
		Soluble Chromium VI	4.5	0.43u	4.3	104.8	1.0
		Insoluble Chromium VI	1280	0.43u	1190	108.3	100
		Sulfate by IC	74.5	32.0	53.0	80.2	2.0
-003	B16W81	Nitrate Nitrite	10.9	5.1	5.1	114.1	2.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 06/06/03

CLIENT: TNUHANFORD F03-006 H2194
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0305L329

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
-----	-----	-----	-----	-----	-----	-----	-----
-006	B16W90	Ammonia, as N	213	4.7 u	202	105.0	1.0
		Oil & Grease Gravimetr	6450	694 u	6980	92.4	1.0
BLANK10	03LICA31-MB1	Chloride by IC	23.6	1.2 u	25.0	94.3	1.0
		Fluoride by IC	23.9	1.2 u	25.0	95.4	1.0
		Nitrite by IC	24.3	1.25u	25.0	97.1	1.0
		Nitrate by IC	24.4	1.25u	25.0	97.4	1.0
		Phosphate by IC	23.7	1.2 u	25.0	94.8	1.0
		Sulfate by IC	24.2	1.2 u	25.0	96.6	1.0
BLANK10	03LVI041-MB1	Soluble Chromium VI	3.9	0.40u	4.0	96.6	1.0
		Insoluble Chromium VI	1220	0.40u	1250	97.8	100
BLANK10	03LN3A27-MB1	Nitrate Nitrite	5.2	0.20u	5.0	104.0	1.0
BLANK10	03LAMA14-MB1	Ammonia, as N	196	5.0 u	200	98.0	1.0
		Ammonia, as N MSD	192	5.0 u	200	96.0	1.0
BLANK10	03LOG023-MB1	Oil & Grease Gravimetr	6430	667 u	6350	101.3	1.0
		Oil & Grease - Grav M	7230	667 u	6350	113.9	1.0
BLANK10	03LOG024-MB1	Oil & Grease Gravimetr	6160	667 u	6710	91.8	1.0
		Oil & Grease - Grav M	6270	667 u	6710	93.4	1.0

Lionville Laboratory, Inc.

INORGANICS DUPLICATE SPIKE REPORT 06/06/03

CLIENT: TNUHANFORD F03-006 H2194
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0305L329

SAMPLE	SITE ID	ANALYTE	SPIKE#1 %RECOV	SPIKE#2 %RECOV	%DIFF
BLANK10	03LAMA14-MB1	Ammonia, as N	98.0	96.0	2.1
BLANK10	03LOG023-MB1	Oil & Grease - Grav	101.3	113.9	11.7
BLANK10	03LOG024-MB1	Oil & Grease - Grav	91.8	93.4	1.7

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 06/06/03

CLIENT: TNUHANFORD F03-006 H2194
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0305L329

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR (REP)
-001REP	B16W79	Chloride by IC	14.3	14.0	2.5	1.0
		Fluoride by IC	1.3 u	1.3 u	NC	1.0
		Nitrite by IC	1.33u	1.33u	NC	1.0
		Nitrate by IC	1710	1750	2.0	100
		Cyanide, Total	0.40u	0.52u	NC	1.0
		Phosphate by IC	1.3 u	1.3 u	NC	1.0
		Sulfate by IC	32.0	32.5	1.6	1.0
		pH	7.5	7.5	0.9	1.0
-003REP	B16W81	Nitrate Nitrite	5.1	5.2	3.6	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 06/06/03

CLIENT: TNUHANFORD F03-006 H2194

LVL LOT #: 0305L329

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR (REP)
-006REP	B16W90	Ammonia, as N	4.7 u	5.2 u	NC	1.0
		Oil & Grease Gravimetri	694 u	694 u	NC	1.0
-007REP	B16W91	% Solids	92.4	92.8	0.48	1.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 06/06/03

CLIENT: TNUHANFORD F03-006 H2194
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0305L329

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
-----	-----	-----	-----	-----	-----	-----
LCSS1	03LC046-LCS1	Cyanide, Total LCS	1.84	2.0	MG/KG	91.8
LCSS2	03LC046-LCS2	Cyanide, Total LCS	9.91	10.0	MG/KG	99.1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client <u>Thru-Hanford F03-0006</u>				Refrigerator #		A 2 2		C 2 2 2					
Est. Final Proj. Sampling Date				#/Type Container	Liquid								
Project # <u>11343-0006-001-9999.00</u>					Solid		1 Ag	1 Ag	1 Ag				
Project Contact/Phone #				Volume	Liquid								
Lionville Laboratory Project Manager <u>AS</u>					Solid		100	250	100				
QC <u>Spec</u> Del <u>Std</u> TAT <u>30 day</u>				Preservatives									
Date Rec'd <u>5-2-03</u> Date Due <u>6-16-03</u>				ANALYSES REQUESTED →		ORGANIC			INORG				
						VOA	BNA	Pes/PCB	Herb	Metal	CN		
				Lionville Laboratory Use Only									
MATRIX CODES: S - Soil SE - Sediment SO - Solid SL - Sludge W - Water O - Oil A - Air DS - Drum Solids DL - Drum Liquids L - EP/TCLP Leachate WI - Wipe X - Other F - Fish	Lab ID	Client ID/Description	Matrix QC Chosen (V) MS MSD	Matrix	Date Collected	Time Collected	H	X	ICR	IN302	ICGR		
	001	Bikew 79		S	4-28-03	13560							
	002	80		I	4-29-03	1510							
	003	81		I	4-29-03	0745							
	004	82		I		0900							
	005	83		I		1020							
	006	90		I	4-28-03	1510							
	007	91		I		1130							

 Special Instructions: Run Matrix QC
Saf # F03-0006

DATE/REVISIONS:

5-14-03 1. Per Client: Due Date = 6-16-03

Samples: 001 → -006 Add Ag, As, B, Be, Bi, Cd, Cr, Cu,

3. Hg, Ni, Pb, Sb, Se/IC: Cl, Fl, NO₂, NO₃, As, Sg

4. INH3N, ICNTO, IPH, 0624H, 0625X, 06CJC,

5. OPCB, ODRS, 06RO

6.

Lionville Laboratory Use Only

 Samples were:
 1) Shipped ☒ or Hand Delivered ☐
 Airbill # See below
 2) Ambient or Chilled ☒
 3) Received in Good Condition ☒ or N
 4) Samples Properly Preserved ☒ or N
 5) Received Within Holding Times ☒ or N

 Tamper Resistant Seal was:
 1) Present on Outer Package ☒ or N
 2) Unbroken on Outer Package ☒ or N
 3) Present on Sample ☒ or N
 4) Unbroken on Sample ☒ or N
 COC Record Present Upon Sample Rec't ☒ or N
 Cooler Temp. 1.3 °C

Relinquished by	Received by	Date	Time
FedEx	DJ Smith	5-2-03	0945

Relinquished by	Received by	Date	Time
ORIGINAL	COMPOSITE		
REWRITTEN	WASTE		

 Discrepancies Between Samples Labels and COC Record? Y or ☒ N
 NOTES:

7915 8463 3226

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-62		Page 1 of 1								
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days							
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (12.5'-15')				SAF No. F03-006		Air Quality <input type="checkbox"/>									
Ice Chest No. ERC 96 05C		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express											
Shipped To RECRU EDERLINE SERVICES (Formerly TMA) 4/22/03		Offsite Property No. A030 220				Bill of Lading/Air Bill No. SEE OSPL											
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None								
				Type of Container	aG	aG	aG	aG	aG								
				No. of Container(s)	1	1	1	1	1								
				Volume	120mL	60mL	120mL	60mL	60mL								
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions 4/22/03	Tritium - H3									
Sample No.	Matrix *	Sample Date	Sample Time														
B16W79	SOIL	4/28/03	1358	X	X	X											
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS 4/22/03				Matrix *					
Relinquished By/Removed From Greg Hulstrom 4/22/03		Date/Time 4/22/03		Received By/Stored In REF 1A 3728		Date/Time 42803 1645		** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. (1) Technetium-99, Strontium-89/90 - Total Sr, Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129, Nickel-63, Neptunium-237 Personnel not available to relinquish samples from the 3728 Ref # 1A on 5/1/03				S=Soil SE=Sediment SO=Solid SI=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquid T=Truss WI=Wipe L=Liquid V=Vegetation X=Other					
Relinquished By/Removed From REF 1A 3728		Date/Time 5/103 1100		Received By/Stored In SJGALE		Date/Time 5/103 1100											
Relinquished By/Removed From SJGALE		Date/Time 5/103 1100		Received By/Stored In FED EX		Date/Time											
Relinquished By/Removed From 5/2/03 0945		Date/Time 5/2/03 0945		Received By/Stored In 5/2/03 0945		Date/Time											
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time											
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time											
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time											
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time											
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time											
LABORATORY SECTION		Received By		Title		Date/Time											
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time											

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-63		Page 1 of 1		
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (17.5'-20')		SAF No. F03-006		Air Quality <input type="checkbox"/>					
Ice Chest No. ERC 96 056		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To EDERLINE SERVICES (Formerly TMA) RELRA <i>4/22/03</i>		Offsite Property No. A030220		Bill of Lading/Air Bill No. 50E 05PC							
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None		
				Type of Container	aG	aG	aG	aG	aG		
				No. of Container(s)	1	1	1	1	1		
				Volume	120mL	60mL	120mL	60mL	60mL		
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions <i>AGM 4/22/03</i>	Tritium - H3			
Sample No.	Matrix *	Sample Date	Sample Time								
B16W80	SOIL	4/28/03	1510	X	X	X	/				
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS <i>4/22/03</i> ** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. (1) Technetium-99; Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237 <i>4/22/03</i> Personnel not available to relinquish samples from the 3728 Ref # <u>1A</u> on <u>5/1/03</u>			
Relinquished By/Removed From <i>Greg Thomas 4/22/03</i>		Date/Time <i>1645</i>		Received By/Stored In <i>REF 1A 3728</i>		Date/Time <i>4/28/03 1645</i>					
Relinquished By/Removed From <i>REF 1A 3728</i>		Date/Time <i>5103 1100</i>		Received By/Stored In <i>SDGALE</i>		Date/Time <i>5103 1100</i>					
Relinquished By/Removed From <i>SDGALE</i>		Date/Time <i>5103</i>		Received By/Stored In <i>FED EX</i>		Date/Time					
Relinquished By/Removed From <i>6/20/03</i>		Date/Time <i>5-2-03 0945</i>		Received By/Stored In <i>SDGALE</i>		Date/Time <i>5-2-03 0945</i>					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		Matrix * S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue W=Wipe L=Liquid V=Vegetation X=Other			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
LABORATORY SECTION		Received By		Title				Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time			

FH-Central Plateau Project				CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						F03-006-64		Page 1 of 1			
Collector Johansen/Pope/Pfister				Company Contact LC Hulstrom			Telephone No. 373-3928			Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling				Sampling Location 216-A-37 (C4106); (27.5°-30°)			SAF No. F03-006			Air Quality <input type="checkbox"/>					
Ice Chest No. ERC 96 056				Field Logbook No. HNF-N-3361			COA 117504ES10			Method of Shipment Federal Express					
Shipped To RECR GERLINE SERVICES (Formerly TMA) 4/22/03				Offsite Property No. A030220			Bill of Lading/Air Bill No. SGE 057C								
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation		Cool 4C	Cool 4C	Cool 4C	None	None					
				Type of Container		aG	aG	aG	aG	aG					
				No. of Container(s)		1	1	1	1	1					
				Volume		120mL	60mL	120mL	60mL	60mL					
SAMPLE ANALYSIS				Chromium Hex - 7196		NO2/NO3 - 353.2		Oil & Grease - 413.1		See item (1) in Special Instructions.		Tritium - H3			
Sample No.		Matrix *		Sample Date		Sample Time									
B16W81		SOIL		4/29/03		0745		X		X		X		B16W81 (W/SLF)	
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS						Matrix *	
Relinquished By/Removed From <i>[Signature]</i> 4/29/03 1400				Received By/Stored In <i>[Signature]</i> 4/29/03 1400				<p>** The laboratory is to achieve a detection limit of 50.0 pC/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis.</p> <p>(1) Technetium-99, Strontium-89,90 - Total Sr, Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237</p> <p>Personnel not available to relinquish samples from the 3728 Ref # 18 on 5/1/03</p>						<p>S=Soil SE=Solid SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other</p>	
Relinquished By/Removed From <i>[Signature]</i> 4/29/03 1400				Received By/Stored In <i>[Signature]</i> 4/29/03 1400											
Relinquished By/Removed From <i>[Signature]</i> 5/1/03 1100				Received By/Stored In <i>[Signature]</i> 5/1/03 1100											
Relinquished By/Removed From <i>[Signature]</i> 5/1/03 1100				Received By/Stored In <i>[Signature]</i> 5/1/03 1100											
Relinquished By/Removed From <i>[Signature]</i> 5/2/03 0945				Received By/Stored In <i>[Signature]</i> 5/2/03 0945											
Relinquished By/Removed From				Received By/Stored In											
LABORATORY SECTION		Received By				Title				Date/Time					
FINAL SAMPLE DISPOSITION		Disposal Method				Disposed By				Date/Time					

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-65		Page 1 of 1		
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (37.5°-40°)		SAF No. F03-006		Air Quality <input type="checkbox"/>					
Ice Chest No. ERC 9.6 055		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To RECRA 1st 4/24/03 EDERLINE SERVICES (Formerly TMA)		Offsite Property No. A030220				Bill of Lading/Air Bill No. 668 05PC					
POSSIBLE SAMPLE HAZARDS/REMARKS		Preservation		Cool 4C	Cool 4C	Cool 4C	None	None			
Special Handling and/or Storage		Type of Container		aG	aG	aG	aG	aG			
		No. of Container(s)		1	1	1	1	1			
		Volume		120mL	60mL	120mL	60mL	60mL			
SAMPLE ANALYSIS		Chromium Hex - 7196		NO2/NO3 - 353.2		Oil & Grease - 413.1		See item (1) in Special Instructions 2/24/03		Tritium - H3	
										TIC TO:	
Sample No.	Matrix *	Sample Date	Sample Time								
B16W82	SOIL	4/29/03	0900	X	X	X	X				B16W48 (WELF)
CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS 7/24 4/22/03						Matrix *	
Relinquished By/Removed From RECRA 1st 4/24/03		Received By/Stored In R. F. Lee 4/24/03		**The laboratory is to achieve a detection limit of 30.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis.						S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Trace WI=Wipe L=Liquid V=Vegetation X=Other	
Relinquished By/Removed From R. F. Lee 4/29/03		Received By/Stored In IB 3728 4/29/03		(4) Technetium-99; Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237 7/24 4/22/03							
Relinquished By/Removed From IB 3728 5103 1100		Received By/Stored In SIGALE 5103 1100		Personnel not available to relinquish samples from the 3728 Ref # 10 on 5.11.03							
Relinquished By/Removed From SIGALE 5103 1100		Received By/Stored In SIGALE 5103 1100									
Relinquished By/Removed From RECRA 1st 5.2.03.0945		Received By/Stored In RECRA 1st 5.2.03.0945									
Relinquished By/Removed From		Received By/Stored In									
LABORATORY SECTION	Received By	Title		Date/Time							
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By		Date/Time							

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						F03-006-66		Page 1 of 1	
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (47.5'-50')		SAF No. F03-006		Air Quality <input type="checkbox"/>					
Ice Chest No. ERC 96 056		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To PERRA EBERLINE SERVICES (Formerly TMA) <i>9/24/03</i>		Offsite Property No. A030220				Bill of Lading/Air Bill No. SEE OSPC					
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None		
				Type of Container	aG	aG	aG	aG	aG		
				No. of Container(s)	1	1	1	1	1		
				Volume	120mL	60mL	120mL	60mL	60mL		
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions <i>9/24/03</i>	Tritium - H3			
Sample No.	Matrix *	Sample Date	Sample Time								
B16W83	SOIL	<i>4/24/03</i>	<i>1020</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>✓</i>				<i>B16W83 (LW5CF)</i>
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS			
Relinquished By/Removed From <i>9/24/03</i>		Date/Time <i>4/24/03</i>		Received By/Stored In <i>REC</i>		Date/Time <i>4/24/03</i>		** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. (1) Technetium-99; Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237 <i>9/24/03</i> Personnel not available to relinquish samples from the 3728 Ref # <i>18</i> on <i>5/1/03</i>			
Relinquished By/Removed From <i>R. F. ...</i>		Date/Time <i>4/29/03</i>		Received By/Stored In <i>IB 3728</i>		Date/Time <i>4/29/03</i>					
Relinquished By/Removed From <i>IB 3728</i>		Date/Time <i>5/03 1100</i>		Received By/Stored In <i>SJ GALE</i>		Date/Time <i>5/03 1100</i>					
Relinquished By/Removed From <i>SJ GALE</i>		Date/Time <i>5/03 1100</i>		Received By/Stored In <i>FED EX</i>		Date/Time					
Relinquished By/Removed From <i>9/24/03</i>		Date/Time <i>5-2-03 0945</i>		Received By/Stored In <i>Smith</i>		Date/Time <i>5-2-03 0945</i>					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
LABORATORY SECTION		Received By		Title				Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time			

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-73		Page 1 of 1		
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (17.5'-20')		SAF No. F03-006		Air Quality <input type="checkbox"/>					
Ice Chest No. ERC 96 05C		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To RECRA EDERLINE SERVICES (Formerly TMA) 982 4/22/03		Offsite Property No. A030220		Bill of Lading/Air Bill No. 58E 03PC							
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None		
				Type of Container	aG	aG	aG	aG	aG		
				No. of Container(s)	1	1	1	1	1		
				Volume	120mL	60mL	120mL	60mL	60mL		
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions 982 4/22/03	Tritium - H3			
Sample No.	Matrix *	Sample Date	Sample Time								
B16W90	SOIL	4/28/03	1510	X	X	X					
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *			
Relinquished By/Removed From Greg Thomas 4/28/03		Date/Time 1645		Received By/Stored In REF 1A 3728		Date/Time 42803 1645		<p>982 4/22/03</p> <p>** The laboratory is to achieve a detection limit of 30.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis.</p> <p>(1) Technetium-99, Strontium-89,90 - Total Sr, Isotopic Thorium (Thorium-232), Carbon-14, Iodine-129, Nickel-63, Neptunium-237 982 4/22/03</p> <p>Personnel not available to relinquish samples from the 3728 Ref # 1A on 5/1/03</p>			
Relinquished By/Removed From REF 1A 3728		Date/Time 5/03 1100		Received By/Stored In SJGALC/ALH		Date/Time 5/03 1100					
Relinquished By/Removed From SJGALC/ALH		Date/Time 5/03 1100		Received By/Stored In FED EX		Date/Time					
Relinquished By/Removed From Red E		Date/Time 5-2-03 0945		Received By/Stored In 2 Jmrd		Date/Time 5-2-03 0945					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
LABORATORY SECTION		Received By		Title		Date/Time					
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time					

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-006-74		Page 1 of 1	
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (0.5')		SAF No. F03-006		Air Quality <input type="checkbox"/>			
Ice Chest No. <u>ERC 96 056</u>		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express			
Shipped To <u>MS103 REERA</u> EBERLINE SERVICES (Formerly TMA)		Offsite Property No. <u>A030 220</u>				Bill of Lading/Air Bill No. <u>SEE 05PC</u>			
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C			
				Type of Container	aG	aG			
				No. of Container(s)	1	1			
				Volume	60mL	250mL			
SAMPLE ANALYSIS				Pesticides - 8081	Chloro- Herbicides - EPA8151				
Sample No.	Matrix *	Sample Date	Sample Time						
B16W91	SOIL	4/26/03	1130	X	X				
CHAIN OF POSSESSION				Sign/Print Names		SPECIAL INSTRUCTIONS			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		Matrix * S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other	
<u>Gret Thomas</u>		<u>4/28/03</u>		<u>REF 1A 3728</u>		<u>4/28/03 1645</u>			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
<u>REF 1A 3728</u>		<u>5103 1100</u>		<u>SDGALV/SL</u>		<u>5103 1100</u>			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
<u>SDGALV/SL</u>		<u>5103 1100</u>		<u>FED EX</u>					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		Personnel not available to relinquish samples from the 3728 Ref # <u>1A</u> on <u>5/1/03</u>	
<u>Ed Ex</u>		<u>5-2-03 0945</u>		<u>Ed Ex</u>		<u>5-2-03 0945</u>			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
LABORATORY SECTION		Received By		Title		Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time			

LIONVILLE LABORATORY INCORPORATED

SAMPLE RECEIPT CHECKLIST

CLIENT: TNU Hamford

Purchase Order/Project:

DATE: 5-2-03

AF# / SOW# / Release #: F03-006

Laboratory SDG #:

0305L329

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

- | | | | | |
|--|---|-----------------------------|---|--|
| 1. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 2. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 3. Airbill # recorded? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 5. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 7. All samples on coc received? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 8. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 10. Shipment meets Lvl1 Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 11. Where applicable, bar code labels are affixed to coc? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 12. coc signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 13. coc will be faxed or emailed to client? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 14. Project Manager/Client contacted concerning discrepancies? (name/date) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |

Cooler # / temp (°C) and Comments:

EEC 96-056 / 1.3°C

Laboratory Sample Custodian:

[Signature]

Laboratory Project Manager:



EBERLINE

SERVICES

June 17, 2003

Mr. Steve Trent
Fluor Hanford Inc.
825 Jadwin Avenue
Richland, WA 99352

Reference: **P.O. #630**
Eberline Services R3-05-013-7507, SDG H2194

Dear Mr. Trent:

Enclosed is the data report for six solid samples designated under SAF No. F03-006 received at Eberline Services on May 2, 2003. The samples were analyzed according to the accompanying chain-of-custody documents.

Please call if you have any questions concerning this report.

Sincerely,

Melissa Mannion

Melissa C. Mannion
Program Manager

MCM

Enclosure: Data Package



Analytical Services
2030 Wright Avenue
P.O. Box 4040
Richmond, California 94804-0040
(510) 235-2633 Fax (510) 235-0438
Toll Free (800) 841-5487
www.eberlineservices.com

1.0 GENERAL

Fluor Hanford Inc. (FH) Sample Delivery Group H2194 was composed of six solid (soil) samples designated under SAF No. F03-006 with a Project Designations of: 200-PW-2/200-PW-4 OU – Borehole Soil Sampling.

The samples were received as stated on the Chain-of-Custody documents. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist.

2.0 ANALYSIS NOTES

2.1 Tritium Analyses

No problems were encountered during the course of the analyses.

2.2 Carbon-14 Analyses

No problems were encountered during the course of the analyses.

2.3 Nickel-63 Analyses

No problems were encountered during the course of the analyses.

2.4 Total Strontium Analyses

No problems were encountered during the course of the analyses.

2.5 Technetium-99 Analyses

No problems were encountered during the course of the analyses.

2.6 Iodine-129 Analyses

No problems were encountered during the course of the analyses.

2.7 Isotopic Thorium Analyses

No problems were encountered during the course of the analyses.

2.8 Neptunium-237 Analyses

No problems were encountered during the course of the analyses.

Case Narrative Certification Statement

"I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data obtained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

Melissa Mannion
Melissa C. Mannion
Program Manager

6/17/3
Date

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H2194

SDG 7507
Contact Melissa C. Mannion

Client Hanford
Contract No. 630
Case no SDG_H2194

S U M M A R Y D A T A S E C T I O N

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Work Summary	.	.	.	6
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Melissa Mannion
Prepared by

Melissa Mannion
Reviewed by

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-TOC
Version 3.06
Report date 06/17/03

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2194

SDG 7507
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG_H2194

ABOUT THE DATA SUMMARY SECTION

The Data Summary Section of a Data Package has all data, in several useful orders, necessary for first level, routine review of the data package for a Sample Delivery Group (SDG). This section follows the Data Package Narrative, which has an overview of the data package and a discussion of special problems. It is followed by the Raw Data Section, which has full details.

The Data Summary Section has several groups of reports:

SAMPLE SUMMARIES

The Sample and QC Summary Reports show all samples, including QC samples, reported in one SDG. These reports cross-reference client and lab sample identifiers.

PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches (lab groupings reflecting how work was organized) relevant to the reported SDG with information necessary to check the completeness and consistency of the SDG.

WORK SUMMARY

The Work Summary Report shows all samples and work done on them relevant to the reported SDG.

METHOD BLANKS

The Method Blank Reports, one for each Method Blank relevant to the SDG, show all results and primary supporting information for the blanks.

LAB CONTROL SAMPLES

The Lab Control Sample Reports, one for each Lab Control Sample relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

REPORT GUIDES

Page 1

SUMMARY DATA SECTION

Page 1

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 06/17/03

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H2194

SDG 7507
Contact Melissa C. Mannion

GUIDE , cont .

Client Hanford
Contract No. 630
Case no SDG H2194

ABOUT THE DATA SUMMARY SECTION

DUPLICATES

The Duplicate Reports, one for each Duplicate and Original sample pair relevant to the SDG, show all results, differences and primary supporting information for these QC samples.

MATRIX SPIKES

The Matrix Spike Reports, one for each Spiked and Original sample pair relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

DATA SHEETS

The Data Sheet Reports, one for each client sample in the SDG, show all results and primary supporting information for these samples.

METHOD SUMMARIES

The Method Summary Reports, one for each test used in the SDG, show all results, QC and method performance data for one analyte on one or two pages. (A test is a short code for the method used to do certain work to the client's specification.)

REPORT GUIDES

The Report Guides, one for each of the above groups of reports, have documentation on how to read the associated reports.

REPORT GUIDES

Page 2

SUMMARY DATA SECTION

Page 2

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 06/17/03

EBERLINE SERVICES/RICHMOND
SAMPLE DELIVERY GROUP H2194

SDG 7507
Contact Melissa C. Mannion

LAB SAMPLE SUMMARY

Client Hanford
Contract No. 630
Case no SDG H2194

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAF NO	CHAIN OF CUSTODY	COLLECTED
R305013-01	B16W79	216-A-37 (C4106)	SOLID		F03-006	F03-006-62	04/28/03 13:50
R305013-02	B16W80	216-A-37 (C4106)	SOLID		F03-006	F03-006-63	04/28/03 15:10
R305013-03	B16W81	216-A-37 (C4106)	SOLID		F03-006	F03-006-64	04/29/03 07:45
R305013-04	B16W82	216-A-37 (C4106)	SOLID		F03-006	F03-006-65	04/29/03 09:00
R305013-05	B16W83	216-A-37 (C4106)	SOLID		F03-006	F03-006-66	04/29/03 10:20
R305013-06	B16W90	216-A-37 (C4106)	SOLID		F03-006	F03-006-73	04/28/03 15:10
R305013-07	Lab Control Sample		SOLID		F03-006		
R305013-08	Method Blank		SOLID		F03-006		
R305013-09	Duplicate (R305013-04)	216-A-37 (C4106)	SOLID		F03-006		04/29/03 09:00
R305013-10	Spike (R305013-04)	216-A-37 (C4106)	SOLID		F03-006		04/29/03 09:00

LAB SUMMARY

Page 1

SUMMARY DATA SECTION

Page 3

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LS
Version 3.06
Report date 06/17/03

EBERLINE SERVICES/RICHMOND
SAMPLE DELIVERY GROUP H2194

SDG 7507
Contact Melissa C. Mannion

QC SUMMARY

Client Hanford
Contract No. 630
Case no SDG H2194

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% SOLIDS	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	LAB COLL	LAB SAMPLE ID	DEPARTMENT SAMPLE ID
7507	F03-006-62	B16W79	SOLID	93.9	149.0 g		05/02/03	4	R305013-01	7507-001
	F03-006-63	B16W80	SOLID	95.3	158.5 g		05/02/03	4	R305013-02	7507-002
	F03-006-64	B16W81	SOLID	95.5	156.2 g		05/02/03	3	R305013-03	7507-003
	F03-006-65	B16W82	SOLID	94.5	152.0 g		05/02/03	3	R305013-04	7507-004
	F03-006-66	B16W83	SOLID	94.3	148.1 g		05/02/03	3	R305013-05	7507-005
	F03-006-73	B16W90	SOLID	95.9	160.9 g		05/02/03	4	R305013-06	7507-006
		Method Blank	SOLID						R305013-08	7507-008
		Lab Control Sample	SOLID						R305013-07	7507-007
		Duplicate (R305013-04)	SOLID	94.5	152.0 g		05/02/03	3	R305013-09	7507-009
		Spike (R305013-04)	SOLID	94.5	152.0 g		05/02/03	3	R305013-10	7507-010

QC SUMMARY

Page 1

SUMMARY DATA SECTION

Page 4

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-QS
Version 3.06
Report date 06/17/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2194

SDG 7507
Contact Melissa C. Mannion

PREP BATCH SUMMARY

Client Hanford
Contract No. 630
Case no SDG H2194

TEST	MATRIX	METHOD	PREPARATION ERROR		PLANCHETS ANALYZED		QUALI-					
			BATCH	2σ %	CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	FIERS
Alpha Spectroscopy												
NP	SOLID	Neptunium in Soil	7060-151	5.0	6			1	1	1/1		
TH	SOLID	Thorium, Isotopic in Soil	7060-151	5.0	6			1	1	1/1		
Beta Counting												
SR	SOLID	Total Strontium in Soil	7060-151	10.0	6			1	1	1/1		
TC	SOLID	Technetium 99 in Soil	7060-151	10.0	6			1	1	1/1		
Gamma Spectroscopy												
I	SOLID	Iodine 129 in Soil	7060-151	10.0	6			1	1	1/1		
Liquid Scintillation Counting												
C	SOLID	Carbon 14 in Soil	7060-151	10.0	6			1	1	1/1		
H	SOLID	Tritium in Soil	7060-151	10.0	6			1	1	1/1	1/1	X
NI_L	SOLID	Nickel 63 in Soil	7060-151	10.0	6			1	1	1/1	1/1	

Duplicates and Matrix Spikes are those with original (Client) sample in this Sample Delivery Group.

Blank and LCS planchets are those in the same preparation batch as some Client, Duplicate or Spike sample.

PREP BATCH SUMMARY

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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2194

SDG 7507
Contact Melissa C. Mannion

LAB WORK SUMMARY

Client Hanford
Contract No. 630
Case no SDG H2194

LAB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF- FIX	ANALYZED	REVIEWED	BY	METHOD
R305013-01	B16W79			7507-001	C		05/28/03	06/17/03	MCM	Carbon 14 in Soil
04/28/03	216-A-37 (C4106)		SOLID	7507-001	H		06/10/03	06/17/03	MCM	Tritium in Soil
05/02/03	F03-006-62	F03-006		7507-001	I		06/04/03	06/17/03	MCM	Iodine 129 in Soil
				7507-001	NI_L		05/31/03	06/17/03	MCM	Nickel 63 in Soil
				7507-001	NP		06/09/03	06/17/03	MCM	Neptunium in Soil
				7507-001	SR		05/28/03	06/17/03	MCM	Total Strontium in Soil
				7507-001	TC		06/16/03	06/17/03	MCM	Technetium 99 in Soil
				7507-001	TH		06/04/03	06/17/03	MCM	Thorium, Isotopic in Soil
R305013-02	B16W80			7507-002	C		05/28/03	06/17/03	MCM	Carbon 14 in Soil
04/28/03	216-A-37 (C4106)		SOLID	7507-002	H		06/11/03	06/17/03	MCM	Tritium in Soil
05/02/03	F03-006-63	F03-006		7507-002	I		06/05/03	06/17/03	MCM	Iodine 129 in Soil
				7507-002	NI_L		05/31/03	06/17/03	MCM	Nickel 63 in Soil
				7507-002	NP		06/06/03	06/17/03	MCM	Neptunium in Soil
				7507-002	SR		05/28/03	06/17/03	MCM	Total Strontium in Soil
				7507-002	TC		06/16/03	06/17/03	MCM	Technetium 99 in Soil
				7507-002	TH		06/04/03	06/17/03	MCM	Thorium, Isotopic in Soil
R305013-03	B16W81			7507-003	C		05/28/03	06/17/03	MCM	Carbon 14 in Soil
04/29/03	216-A-37 (C4106)		SOLID	7507-003	H		06/11/03	06/17/03	MCM	Tritium in Soil
05/02/03	F03-006-64	F03-006		7507-003	I		06/06/03	06/17/03	MCM	Iodine 129 in Soil
				7507-003	NI_L		05/31/03	06/17/03	MCM	Nickel 63 in Soil
				7507-003	NP		06/06/03	06/17/03	MCM	Neptunium in Soil
				7507-003	SR		05/28/03	06/17/03	MCM	Total Strontium in Soil
				7507-003	TC		06/15/03	06/17/03	MCM	Technetium 99 in Soil
				7507-003	TH		06/04/03	06/17/03	MCM	Thorium, Isotopic in Soil
R305013-04	B16W82			7507-004	C		05/28/03	06/17/03	MCM	Carbon 14 in Soil
04/29/03	216-A-37 (C4106)		SOLID	7507-004	H		06/11/03	06/17/03	MCM	Tritium in Soil
05/02/03	F03-006-65	F03-006		7507-004	I		06/07/03	06/17/03	MCM	Iodine 129 in Soil
				7507-004	NI_L		05/31/03	06/17/03	MCM	Nickel 63 in Soil
				7507-004	NP		06/06/03	06/17/03	MCM	Neptunium in Soil
				7507-004	SR		05/28/03	06/17/03	MCM	Total Strontium in Soil
				7507-004	TC		06/16/03	06/17/03	MCM	Technetium 99 in Soil
				7507-004	TH		06/04/03	06/17/03	MCM	Thorium, Isotopic in Soil

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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2194

SDG 7507

Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford

Contract No. 630

Case no SDG H2194

LAB SAMPLE	CLIENT SAMPLE ID					SUF-				
COLLECTED	LOCATION		MATRIX		TEST	FIX	ANALYZED	REVIEWED	BY	METHOD
RECEIVED	CUSTODY	SAF No		PLANCHET						
R305013-05	B16W83			7507-005	C		05/29/03	06/17/03	MCM	Carbon 14 in Soil
04/29/03	216-A-37 (C4106)		SOLID	7507-005	H		06/11/03	06/17/03	MCM	Tritium in Soil
05/02/03	F03-006-66	F03-006		7507-005	I		06/08/03	06/17/03	MCM	Iodine 129 in Soil
				7507-005	NI_L		05/31/03	06/17/03	MCM	Nickel 63 in Soil
				7507-005	NP		06/06/03	06/17/03	MCM	Neptunium in Soil
				7507-005	SR		05/28/03	06/17/03	MCM	Total Strontium in Soil
				7507-005	TC		06/16/03	06/17/03	MCM	Technetium 99 in Soil
				7507-005	TH		06/04/03	06/17/03	MCM	Thorium, Isotopic in Soil
R305013-06	B16W90			7507-006	C		05/29/03	06/17/03	MCM	Carbon 14 in Soil
04/28/03	216-A-37 (C4106)		SOLID	7507-006	H		06/11/03	06/17/03	MCM	Tritium in Soil
05/02/03	F03-006-73	F03-006		7507-006	I		06/10/03	06/17/03	MCM	Iodine 129 in Soil
				7507-006	NI_L		05/31/03	06/17/03	MCM	Nickel 63 in Soil
				7507-006	NP		06/06/03	06/17/03	MCM	Neptunium in Soil
				7507-006	SR		05/28/03	06/17/03	MCM	Total Strontium in Soil
				7507-006	TC		06/16/03	06/17/03	MCM	Technetium 99 in Soil
				7507-006	TH		06/04/03	06/17/03	MCM	Thorium, Isotopic in Soil
R305013-07	Lab Control Sample			7507-007	C		05/29/03	06/17/03	MCM	Carbon 14 in Soil
			SOLID	7507-007	H		06/11/03	06/17/03	MCM	Tritium in Soil
		F03-006		7507-007	I		06/10/03	06/17/03	MCM	Iodine 129 in Soil
				7507-007	NI_L		05/31/03	06/17/03	MCM	Nickel 63 in Soil
				7507-007	NP		06/06/03	06/17/03	MCM	Neptunium in Soil
				7507-007	SR		05/28/03	06/17/03	MCM	Total Strontium in Soil
				7507-007	TC		06/15/03	06/17/03	MCM	Technetium 99 in Soil
				7507-007	TH		06/04/03	06/17/03	MCM	Thorium, Isotopic in Soil
R305013-08	Method Blank			7507-008	C		05/28/03	06/17/03	MCM	Carbon 14 in Soil
			SOLID	7507-008	H		06/11/03	06/17/03	MCM	Tritium in Soil
		F03-006		7507-008	I		06/11/03	06/17/03	MCM	Iodine 129 in Soil
				7507-008	NI_L		05/31/03	06/17/03	MCM	Nickel 63 in Soil
				7507-008	NP		06/06/03	06/17/03	MCM	Neptunium in Soil
				7507-008	SR		05/28/03	06/17/03	MCM	Total Strontium in Soil
				7507-008	TC		06/16/03	06/17/03	MCM	Technetium 99 in Soil
				7507-008	TH		06/04/03	06/17/03	MCM	Thorium, Isotopic in Soil

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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2194

SDG 7507

Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford

Contract No. 630

Case no SDG H2194

LAB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF- FIX	ANALYZED	REVIEWED	BY	METHOD
R305013-09	Duplicate (R305013-04)			7507-009	C		05/29/03	06/17/03	MCM	Carbon 14 in Soil
04/29/03	216-A-37 (C4106)		SOLID	7507-009	H		06/11/03	06/17/03	MCM	Tritium in Soil
05/02/03		F03-006		7507-009	I		06/11/03	06/17/03	MCM	Iodine 129 in Soil
				7507-009	NI_L		05/31/03	06/17/03	MCM	Nickel 63 in Soil
				7507-009	NP		06/06/03	06/17/03	MCM	Neptunium in Soil
				7507-009	SR		05/28/03	06/17/03	MCM	Total Strontium in Soil
				7507-009	TC		06/15/03	06/17/03	MCM	Technetium 99 in Soil
				7507-009	TH		06/04/03	06/17/03	MCM	Thorium, Isotopic in Soil
R305013-10	Spike (R305013-04)			7507-010	H		06/11/03	06/17/03	MCM	Tritium in Soil
04/29/03	216-A-37 (C4106)		SOLID	7507-010	NI_L		05/31/03	06/17/03	MCM	Nickel 63 in Soil
05/02/03		F03-006								

COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP	SPIKE	TOTAL
C	F03-006	Carbon 14 in Soil	C14_COX_LSC	6			1	1	1		9
H	F03-006	Tritium in Soil	906.0_H3_LSC	6			1	1	1	1	10
I	F03-006	Iodine 129 in Soil	I129_SEP_LEPS_GS	6			1	1	1		9
NI_L	F03-006	Nickel 63 in Soil	NI63_LSC	6			1	1	1	1	10
NP	F03-006	Neptunium in Soil	NP237_LLE_PLATE_AEA	6			1	1	1		9
SR	F03-006	Total Strontium in Soil	SRTOT_SEP_PRECIP_GPC	6			1	1	1		9
TC	F03-006	Technetium 99 in Soil	TC99_TR_SEP_LSC	6			1	1	1		9
TH	F03-006	Thorium, Isotopic in Soil	THISO_IE_PLATE_AEA	6			1	1	1		9
TOTALS				48			8	8	8	2	74

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EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H2194

7507-008

Method Blank

METHOD BLANK

SDG <u>7507</u>	Client/Case no <u>Hanford</u>	SDG <u>H2194</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R305013-08</u>	Client sample id <u>Method Blank</u>	
Dept sample id <u>7507-008</u>	Material/Matrix <u>SOLID</u>	
	SAF No <u>F03-006</u>	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Tritium	10028-17-8	-0.065	0.17	0.30	400	U	H
Carbon 14	14762-75-5	-0.216	1.8	3.0	50	U	C
Nickel 63	13981-37-8	<u>-2.75</u>	1.4	2.4	30	U	NI_L
Total Strontium	SR-RAD	0.100	0.16	0.30	1.0	U	SR
Technetium 99	14133-76-7	0.127	0.18	0.54	15	U	TC
Thorium 228	14274-82-9	0.041	0.081	0.31		U	TH
Thorium 230	14269-63-7	0.162	0.16	0.31	1.0	U	TH
Thorium 232	TH-232	0	0.081	0.31	1.0	U	TH
Neptunium 237	13994-20-2	0.036	0.073	0.11	1.0	U	NP
Iodine 129	15046-84-1	0.294	0.70	1.6	2.0	U	I

200-PW-2/200-PW-4 OU-Borehole Soil

QC-BLANK #44677

Lab id <u>EBRINE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
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EBERLINE SERVICES/RICHMOND
SAMPLE DELIVERY GROUP H2194

7507-007

Lab Control Sample

LAB CONTROL SAMPLE

SDG <u>7507</u>	Client/Case no <u>Hanford</u> SDG <u>H2194</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>
Lab sample id <u>R305013-07</u>	Client sample id <u>Lab Control Sample</u>
Dept sample id <u>7507-007</u>	Material/Matrix <u>SOLID</u>
	SAF No <u>F03-006</u>

ANALYTE	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Tritium	12.4	0.43	0.30	400		H	13.0	0.52	95	84-116	80-120
Carbon 14	1730	35	9.0	50		C	1950	78	89	85-115	80-120
Nickel 63	215	4.7	2.9	30		NI_L	228	9.1	94	84-116	80-120
Total Strontium	18.4	0.87	0.32	1.0		SR	21.0	0.84	88	84-116	80-120
Technetium 99	121	2.9	0.55	15		TC	109	4.4	111	82-118	80-120
Thorium 230	36.9	3.9	0.28	1.0		TH	40.8	1.6	90	83-117	80-120
Neptunium 237	17.7	1.7	0.11	1.0		NP	19.9	0.80	89	84-116	80-120
Iodine 129	248	2.5	<u>2.6</u>	2.0		I	232	9.3	107	83-117	80-120

200-PW-2/200-PW-4 OU-Borehole Soil

QC-LCS #44676

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-LCS</u>
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2194

7507-009

B16W82

DUPLICATE

SDG <u>7507</u>		Client/Case no <u>Hanford</u> SDG <u>H2194</u>	
Contact <u>Melissa C. Mannion</u>		Contract <u>No. 630</u>	
DUPLICATE		ORIGINAL	
Lab sample id <u>R305013-09</u>	Lab sample id <u>R305013-04</u>	Client sample id <u>B16W82</u>	
Dept sample id <u>7507-009</u>	Dept sample id <u>7507-004</u>	Location/Matrix <u>216-A-37 (C4106)</u> <u>SOLID</u>	
	Received <u>05/02/03</u>	Collected/Weight <u>04/29/03 09:00</u> <u>152.0 g</u>	
% solids <u>94.5</u>	% solids <u>94.5</u>	Custody/SAF No <u>F03-006-65</u> <u>F03-006</u>	

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALI- FIERS	RPD %	3σ PROT TOT LIMIT
Tritium	148	1.5	0.26	400		H	154	1.6	0.27		4	21
Carbon 14	-0.788	1.5	2.6	50	U	C	-0.093	1.7	2.8	U	-	
Nickel 63	11.3	1.7	2.5	30		NI_L	14.4	1.8	2.5		24	36
Total Strontium	-0.012	0.12	0.26	1.0	U	SR	-0.012	0.12	0.25	U	-	
Technetium 99	0.160	0.19	0.55	15	U	TC	0.170	0.18	0.52	U	-	
Thorium 228	0.531	0.31	0.29			TH	0.299	0.23	0.29		56	140
Thorium 230	0.379	0.23	0.29	1.0		TH	0.299	0.23	0.29		24	144
Thorium 232	0.265	0.23	0.29	1.0	U	TH	0.411	0.23	0.29		43	145
Neptunium 237	0	0.079	0.12	1.0	U	NP	0.032	0.063	0.095	U	-	
Iodine 129	-0.482	1.3	<u>2.9</u>	2.0	U	I	0.256	0.87	2.0	U	-	

200-PW-2/200-PW-4 OU-Borehole Soil

QC-DUP#4 44678

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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2194

7507-010

B16W82

MATRIX SPIKE

SDG <u>7507</u>		Client/Case no <u>Hanford</u>		SDG <u>H2194</u>
Contact <u>Melissa C. Mannion</u>		Contract <u>No. 630</u>		
MATRIX SPIKE		ORIGINAL		
Lab sample id <u>R305013-10</u>	Lab sample id <u>R305013-04</u>	Client sample id <u>B16W82</u>		
Dept sample id <u>7507-010</u>	Dept sample id <u>7507-004</u>	Location/Matrix <u>216-A-37 (C4106)</u> <u>SOLID</u>		
	Received <u>05/02/03</u>	Collected/Weight <u>04/29/03 09:00</u> <u>152.0 g</u>		
% solids <u>94.5</u>	% solids <u>94.5</u>	Custody/SAF No <u>F03-006-65</u> <u>F03-006</u>		

ANALYTE	SPIKE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	ORIGINAL pCi/g	2σ ERR (COUNT)	REC 3σ % (TOTAL)	LMTS	PROTOCOL LIMITS
Tritium	196	2.0	0.30	400	X	H	50.1	2.0	154	1.6	84	25-175	60-140
Nickel 63	855	17	5.8	30		NI_L	916	37	14.4	1.8	92	84-116	60-140

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MATRIX SPIKES

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Report date <u>06/17/03</u>

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H2194

7507-001

B16W79

D A T A S H E E T

SDG <u>7507</u>	Client/Case no <u>Hanford</u>	SDG <u>H2194</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R305013-01</u>	Client sample id <u>B16W79</u>	
Dept sample id <u>7507-001</u>	Location/Matrix <u>216-A-37 (C4106)</u>	<u>SOLID</u>
Received <u>05/02/03</u>	Collected/Weight <u>04/28/03 13:50</u>	<u>149.0 g</u>
% solids <u>93.9</u>	Custody/SAF No <u>F03-006-62</u>	<u>F03-006</u>

ANALYTE	CAS NO	RESULT pCi/g	2 σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Tritium	10028-17-8	134	1.4	0.26	400		H
Carbon 14	14762-75-5	1.47	1.8	3.0	50	U	C
Nickel 63	13981-37-8	1.81	1.5	2.5	30	U	NI_L
Total Strontium	SR-RAD	1.70	0.26	0.25	1.0		SR
Technetium 99	14133-76-7	0.166	0.27	0.55	15	U	TC
Thorium 228	14274-82-9	0.572	0.29	0.34			TH
Thorium 230	14269-63-7	0.143	0.14	0.27	1.0	U	TH
Thorium 232	TH-232	0.393	0.22	0.27	1.0		TH
Neptunium 237	13994-20-2	0.016	0.031	0.047	1.0	U	NP
Iodine 129	15046-84-1	0.221	0.81	1.8	2.0	U	I

200-PW-2/200-PW-4 OU-Borehole Soil

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
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EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H2194

7507-002

B16W80

DATA SHEET

SDG <u>7507</u>	Client/Case no <u>Hanford</u>	SDG <u>H2194</u>
Contact <u>Melissa C. Mannion</u>	Contract <u>No. 630</u>	
Lab sample id <u>R305013-02</u>	Client sample id <u>B16W80</u>	
Dept sample id <u>7507-002</u>	Location/Matrix <u>216-A-37 (C4106)</u>	<u>SOLID</u>
Received <u>05/02/03</u>	Collected/Weight <u>04/28/03 15:10</u>	<u>158.5 g</u>
% solids <u>95.3</u>	Custody/SAF No <u>F03-006-63</u>	<u>F03-006</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Tritium	10028-17-8	152	1.5	0.27	400		H
Carbon 14	14762-75-5	0.302	1.5	2.6	50	U	C
Nickel 63	13981-37-8	2.64	1.6	2.6	30		NI_L
Total Strontium	SR-RAD	0.001	0.12	0.25	1.0	U	SR
Technetium 99	14133-76-7	0.150	0.25	0.55	15	U	TC
Thorium 228	14274-82-9	0.187	0.22	0.36		U	TH
Thorium 230	14269-63-7	0.075	0.15	0.29	1.0	U	TH
Thorium 232	TH-232	0.299	0.23	0.29	1.0		TH
Neptunium 237	13994-20-2	0	0.080	0.12	1.0	U	NP
Iodine 129	15046-84-1	-0.047	0.92	<u>2.1</u>	2.0	U	I

200-PW-2/200-PW-4 OU-Borehole Soil

DATA SHEETS

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Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>06/17/03</u>

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2194

7507-003

B16W81

DATA SHEET

SDG <u>7507</u>	Client/Case no <u>Hanford</u>	SDG <u>H2194</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R305013-03</u>	Client sample id <u>B16W81</u>	
Dept sample id <u>7507-003</u>	Location/Matrix <u>216-A-37 (C4106)</u>	<u>SOLID</u>
Received <u>05/02/03</u>	Collected/Weight <u>04/29/03 07:45</u>	<u>156.2 g</u>
% solids <u>95.5</u>	Custody/SAF No <u>F03-006-64</u>	<u>F03-006</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Tritium	10028-17-8	130	1.3	0.26	400		H
Carbon 14	14762-75-5	-0.315	1.8	3.0	50	U	C
Nickel 63	13981-37-8	2.05	1.5	2.5	30	U	NI_L
Total Strontium	SR-RAD	-0.019	0.15	0.32	1.0	U	SR
Technetium 99	14133-76-7	0.189	0.20	0.57	15	U	TC
Thorium 228	14274-82-9	0.348	0.31	0.37		U	TH
Thorium 230	14269-63-7	0.464	0.31	0.37	1.0		TH
Thorium 232	TH-232	0.541	0.31	0.30	1.0		TH
Neptunium 237	13994-20-2	0.072	0.072	0.11	1.0	U	NP
Iodine 129	15046-84-1	-0.152	0.83	1.9	2.0	U	I

200-PW-2/200-PW-4 OU-Borehole Soil

DATA SHEETS

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SUMMARY DATA SECTION

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Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>06/17/03</u>

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H2194

7507-004

B16W82

DATA SHEET

SDG <u>7507</u>	Client/Case no <u>Hanford</u>	SDG <u>H2194</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R305013-04</u>	Client sample id <u>B16W82</u>	
Dept sample id <u>7507-004</u>	Location/Matrix <u>216-A-37 (C4106)</u>	<u>SOLID</u>
Received <u>05/02/03</u>	Collected/Weight <u>04/29/03 09:00</u>	<u>152.0 g</u>
% solids <u>94.5</u>	Custody/SAF No <u>F03-006-65</u>	<u>F03-006</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Tritium	10028-17-8	154	1.6	0.27	400		H
Carbon 14	14762-75-5	-0.093	1.7	2.8	50	U	C
Nickel 63	13981-37-8	14.4	1.8	2.5	30		NI_L
Total Strontium	SR-RAD	-0.012	0.12	0.25	1.0	U	SR
Technetium 99	14133-76-7	0.170	0.18	0.52	15	U	TC
Thorium 228	14274-82-9	0.299	0.23	0.29			TH
Thorium 230	14269-63-7	0.299	0.23	0.29	1.0		TH
Thorium 232	TH-232	0.411	0.23	0.29	1.0		TH
Neptunium 237	13994-20-2	0.032	0.063	0.095	1.0	U	NP
Iodine 129	15046-84-1	0.256	0.87	2.0	2.0	U	I

200-PW-2/200-PW-4 OU-Borehole Soil

DATA SHEETS

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SUMMARY DATA SECTION

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Lab id <u>EBRINE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>06/17/03</u>

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H2194

7507-005

B16W83

D A T A S H E E T

SDG <u>7507</u>	Client/Case no <u>Hanford</u>	SDG <u>H2194</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R305013-05</u>	Client sample id <u>B16W83</u>	
Dept sample id <u>7507-005</u>	Location/Matrix <u>216-A-37 (C4106)</u>	<u>SOLID</u>
Received <u>05/02/03</u>	Collected/Weight <u>04/29/03 10:20</u>	<u>148.1 g</u>
% solids <u>94.3</u>	Custody/SAF No <u>F03-006-66</u>	<u>F03-006</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Tritium	10028-17-8	267	2.7	0.37	400		H
Carbon 14	14762-75-5	-0.493	1.7	2.9	50	U	C
Nickel 63	13981-37-8	1.34	1.5	2.5	30	U	NI_L
Total Strontium	SR-RAD	-0.060	0.12	0.27	1.0	U	SR
Technetium 99	14133-76-7	0.113	0.31	0.59	15	U	TC
Thorium 228	14274-82-9	0.376	0.23	0.29			TH
Thorium 230	14269-63-7	0.300	0.23	0.29	1.0		TH
Thorium 232	TH-232	0.376	0.23	0.29	1.0		TH
Neptunium 237	13994-20-2	0	0.085	0.13	1.0	U	NP
Iodine 129	15046-84-1	-0.130	1.0	2.3	2.0	U	I

200-PW-2/200-PW-4 OU-Borehole Soil

DATA SHEETS

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SUMMARY DATA SECTION

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Lab id <u>EBRINE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>06/17/03</u>

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H2194

7507-006

B16W90

DATA SHEET

SDG <u>7507</u>	Client/Case no <u>Hanford</u>	SDG <u>H2194</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R305013-06</u>	Client sample id <u>B16W90</u>	
Dept sample id <u>7507-006</u>	Location/Matrix <u>216-A-37 (C4106)</u>	<u>SOLID</u>
Received <u>05/02/03</u>	Collected/Weight <u>04/28/03 15:10</u>	<u>160.9 g</u>
% solids <u>95.9</u>	Custody/SAF No <u>F03-006-73</u>	<u>F03-006</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Tritium	10028-17-8	147	1.5	0.27	400		H
Carbon 14	14762-75-5	0.926	1.6	2.7	50	U	C
Nickel 63	13981-37-8	1.17	1.6	2.6	30	U	NI_L
Total Strontium	SR-RAD	-0.087	0.11	0.25	1.0	U	SR
Technetium 99	14133-76-7	0.072	0.19	0.60	15	U	TC
Thorium 228	14274-82-9	0.307	0.23	0.29			TH
Thorium 230	14269-63-7	0.268	0.23	0.29	1.0	U	TH
Thorium 232	TH-232	0.307	0.23	0.29	1.0		TH
Neptunium 237	13994-20-2	0.040	0.079	0.12	1.0	U	NP
Iodine 129	15046-84-1	-0.070	2.0	4.4	2.0	U	I

200-PW-2/200-PW-4 OU-Borehole Soil

DATA SHEETS

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SUMMARY DATA SECTION

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Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>06/17/03</u>

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2194

Test NP Matrix SOLID
SDG 7507
Contact Melissa C. Mannion

LAB METHOD SUMMARY

NEPTUNIUM IN SOIL
ALPHA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG H2194

RESULTS

LAB	RAW	SUF-		Neptunium
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	237
Preparation batch 7060-151				
R305013-01	7507-001	B16W79		U
R305013-02	7507-002	B16W80		U
R305013-03	7507-003	B16W81		U
R305013-04	7507-004	B16W82		U
R305013-05	7507-005	B16W83		U
R305013-06	7507-006	B16W90		U
R305013-07	7507-007	LCS (QC ID=44676)		ok
R305013-08	7507-008	BLK (QC ID=44677)		U
R305013-09	7507-009	Duplicate (R305013-04)		- U

Nominal values and limits from method RDLs (pCi/g) 1.0
200-PW-2/200-PW-4 OU-Borehole Soil

METHOD PERFORMANCE

LAB	RAW	SUF-		MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS		ANAL-	
SAMPLE ID	TEST FIX	CLIENT	SAMPLE ID	pCi/g	g	FAC	TION	%	%	min	keV	KeV	HELD	PREPARED	YZED	DETECTOR
Preparation batch 7060-151		2σ prep error 5.0 %		Reference Lab Notebook		7060		pg.		151						
R305013-01		B16W79		0.047	0.500			73		233			42	06/06/03	06/09	SS-040
R305013-02		B16W80		0.12	0.500			63		102			39	06/06/03	06/06	SS-010
R305013-03		B16W81		0.11	0.500			75		102			38	06/06/03	06/06	SS-011
R305013-04		B16W82		0.095	0.500			82		103			38	06/06/03	06/06	SS-015
R305013-05		B16W83		0.13	0.500			63		103			38	06/06/03	06/06	SS-016
R305013-06		B16W90		0.12	0.500			68		102			39	06/06/03	06/06	SS-039
R305013-07		LCS (QC ID=44676)		0.11	0.500			71		103				06/06/03	06/06	SS-040
R305013-08		BLK (QC ID=44677)		0.11	0.500			71		103				06/06/03	06/06	SS-041
R305013-09		Duplicate (R305013-04)		0.12	0.500			65		103			38	06/06/03	06/06	SS-042
		(QC ID=44678)														

Nominal values and limits from method 1.0 0.500 20-105 100 180

METHOD SUMMARIES

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SUMMARY DATA SECTION

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Lab id EBRLE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 06/17/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2194

Test NP Matrix SOLID
SDG 7507
Contact Melissa C. Mannion

LAB METHOD SUMMARY, cont.

NEPTUNIUM IN SOIL
ALPHA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG H2194

PROCEDURES	REFERENCE	NP237_LLE_PLATE_AEA
CP-060	Soil Preparation, rev 4	
CP-071	Soil Dissolution, > 1.0g Aliquot, rev 2	
CP-930	Neptunium from Solids and Water by Extraction Chromatography, rev 0	
CP-008	Heavy Element Electroplating, rev 7	

AVERAGES \pm 2 SD	MDA <u>0.11</u> \pm <u>0.049</u>
FOR 9 SAMPLES	YIELD <u>70</u> \pm <u>12</u>

METHOD SUMMARIES

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SUMMARY DATA SECTION

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Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 06/17/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2194

Test IH Matrix SOLID
 SDG 7507
 Contact Melissa C. Mannion

LAB METHOD SUMMARY

THORIUM, ISOTOPIC IN SOIL

ALPHA SPECTROSCOPY

Client Hanford
 Contract No. 630
 Contract SDG H2194

RESULTS

LAB RAW SUF-
 SAMPLE ID TEST FIX PLANCHET CLIENT SAMPLE ID Thorium 230

Preparation batch 7060-151

R305013-01	7507-001	B16W79	U
R305013-02	7507-002	B16W80	U
R305013-03	7507-003	B16W81	0.464
R305013-04	7507-004	B16W82	0.299
R305013-05	7507-005	B16W83	0.300
R305013-06	7507-006	B16W90	U
R305013-07	7507-007	LCS (QC ID=44676)	ok
R305013-08	7507-008	BLK (QC ID=44677)	U
R305013-09	7507-009	Duplicate (R305013-04)	ok

Nominal values and limits from method RDLs (pCi/g) 1.0
 200-PW-2/200-PW-4 OU-Borehole Soil

METHOD PERFORMANCE

LAB RAW SUF- MAX MDA ALIQ PREP DILU- YIELD EFF COUNT FWHM DRIFT DAYS ANAL-
 SAMPLE ID TEST FIX CLIENT SAMPLE ID pCi/g g FAC TION % % min keV KeV HELD PREPARED YZED DETECTOR

Preparation batch 7060-151 2σ prep error 5.0 % Reference Lab Notebook 7060 pg. 151

R305013-01	B16W79	0.27	0.250	102	152	37	06/04/03	06/04	SS-039
R305013-02	B16W80	0.29	0.250	95	152	37	06/04/03	06/04	SS-040
R305013-03	B16W81	0.37	0.250	90	152	36	06/04/03	06/04	SS-041
R305013-04	B16W82	0.29	0.250	93	152	36	06/04/03	06/04	SS-042
R305013-05	B16W83	0.29	0.250	90	152	36	06/04/03	06/04	SS-043
R305013-06	B16W90	0.29	0.250	84	152	37	06/04/03	06/04	SS-044
R305013-07	LCS (QC ID=44676)	0.28	0.250	96	152		06/04/03	06/04	SS-047
R305013-08	BLK (QC ID=44677)	0.31	0.250	85	153		06/04/03	06/04	SS-048
R305013-09	Duplicate (R305013-04)	0.29	0.250	104	153	36	06/04/03	06/04	SS-049
	(QC ID=44678)								

Nominal values and limits from method 1.0 0.250 20-105 150 180

METHOD SUMMARIES

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SUMMARY DATA SECTION

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Lab id EBRLNE
 Protocol Hanford
 Version Ver 1.0
 Form DVD-LMS
 Version 3.06
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2194

Test TH Matrix SOLID

SDG 7507

Contact Melissa C. Mannion

LAB METHOD SUMMARY, cont.

THORIUM, ISOTOPIC IN SOIL

ALPHA SPECTROSCOPY

Client Hanford

Contract No. 630

Contract SDG H2194

PROCEDURES	REFERENCE	THISO_1E_PLATE_AEA
CP-060	Soil Preparation, rev 4	
CP-071	Soil Dissolution, > 1.0g Aliquot, rev 2	
CP-900	Thorium in Water and Dissolved Solid Samples by Extraction Chromatography, rev 1	
CP-008	Heavy Element Electroplating, rev 7	

AVERAGES \pm 2 SD

MDA 0.30 \pm 0.058

FOR 9 SAMPLES

YIELD 93 \pm 14

METHOD SUMMARIES

Page 4

SUMMARY DATA SECTION

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Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

Form DVD-LMS

Version 3.06

Report date 06/17/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2194

Test SR Matrix SOLID
SDG 7507
Contact Melissa C. Mannion

LAB METHOD SUMMARY

TOTAL STRONTIUM IN SOIL
BETA COUNTING

Client Hanford
Contract No. 630
Contract SDG H2194

RESULTS

LAB	RAW	SUF-		Total
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Strontium
Preparation batch 7060-151				
R305013-01		7507-001	B16W79	1.70
R305013-02		7507-002	B16W80	U
R305013-03		7507-003	B16W81	U
R305013-04		7507-004	B16W82	U
R305013-05		7507-005	B16W83	U
R305013-06		7507-006	B16W90	U
R305013-07		7507-007	LCS (QC ID=44676)	ok
R305013-08		7507-008	BLK (QC ID=44677)	U
R305013-09		7507-009	Duplicate (R305013-04)	- U

Nominal values and limits from method RDLs (pCi/g) 1.0
200-PW-2/200-PW-4 OU-Borehole Soil

METHOD PERFORMANCE

LAB	RAW	SUF-	MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS	ANAL-
SAMPLE ID	TEST FIX	CLIENT SAMPLE ID	pCi/g	g	FAC	TION	%	%	min	keV	KeV	HELD PREPARED	YZED DETECTOR
Preparation batch 7060-151 2σ prep error 10.0 % Reference Lab Notebook 7060 pg. 151													
R305013-01		B16W79	0.25	1.00			95		102			30 05/28/03 05/28	GRB-217
R305013-02		B16W80	0.25	1.00			96		102			30 05/28/03 05/28	GRB-218
R305013-03		B16W81	0.32	1.00			78		102			29 05/28/03 05/28	GRB-219
R305013-04		B16W82	0.25	1.00			95		102			29 05/28/03 05/28	GRB-220
R305013-05		B16W83	0.27	1.00			91		102			29 05/28/03 05/28	GRB-221
R305013-06		B16W90	0.25	1.00			98		102			30 05/28/03 05/28	GRB-222
R305013-07		LCS (QC ID=44676)	0.32	1.00			78		102			05/28/03 05/28	GRB-223
R305013-08		BLK (QC ID=44677)	0.30	1.00			81		102			05/28/03 05/28	GRB-224
R305013-09		Duplicate (R305013-04)	0.26	1.00			98		100			29 05/28/03 05/28	GRB-232
		(QC ID=44678)											

Nominal values and limits from method 1.0 1.00 30-105 100 180

METHOD SUMMARIES

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Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 06/17/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2194

Test SR Matrix SOLID

SDG 7507

Contact Melissa C. Mannion

LAB METHOD SUMMARY, cont.

TOTAL STRONTIUM IN SOIL

BETA COUNTING

Client Hanford

Contract No. 630

Contract SDG H2194

PROCEDURES	REFERENCE	SRTOT_SEP_PRECIP_GPC
	CP-060	Soil Preparation, rev 4
	CP-071	Soil Dissolution, > 1.0g Aliquot, rev 2
	CP-381	Strontium in Solids, rev 1

AVERAGES \pm 2 SD

MDA 0.27 \pm 0.061

FOR 9 SAMPLES

YIELD 90 \pm 17

METHOD SUMMARIES

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SUMMARY DATA SECTION

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Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

Form DVD-LMS

Version 3.06

Report date 06/17/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2194

Test IC Matrix SOLID
 SDG 7507
 Contact Melissa C. Mannion

LAB METHOD SUMMARY
 TECHNETIUM 99 IN SOIL
 BETA COUNTING

Client Hanford
 Contract No. 630
 Contract SDG H2194

RESULTS

LAB	RAW	SUF-		Technetium
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	99
Preparation batch 7060-151				
R305013-01		7507-001	B16W79	U
R305013-02		7507-002	B16W80	U
R305013-03		7507-003	B16W81	U
R305013-04		7507-004	B16W82	U
R305013-05		7507-005	B16W83	U
R305013-06		7507-006	B16W90	U
R305013-07		7507-007	LCS (QC ID=44676)	ok
R305013-08		7507-008	BLK (QC ID=44677)	U
R305013-09		7507-009	Duplicate (R305013-04)	- U

Nominal values and limits from method RDLs (pCi/g) 15
 200-PW-2/200-PW-4 OU-Borehole Soil

METHOD PERFORMANCE

LAB	RAW	SUF-		MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS		ANAL-	
SAMPLE ID	TEST	FIX	CLIENT SAMPLE ID	pCi/g	g	FAC	TION	%	%	min	keV	KeV	HELD	PREPARED	YZED	DETECTOR
Preparation batch 7060-151 2σ prep error 10.0 % Reference Lab Notebook 7060 pg. 151																
R305013-01			B16W79	0.55	1.02			90		50			49	06/12/03	06/16	GRB-217
R305013-02			B16W80	0.55	1.03			89		50			49	06/12/03	06/16	GRB-218
R305013-03			B16W81	0.57	1.02			87		50			47	06/12/03	06/15	GRB-203
R305013-04			B16W82	0.52	1.05			89		50			48	06/12/03	06/16	GRB-220
R305013-05			B16W83	0.59	1.02			86		50			48	06/12/03	06/16	GRB-221
R305013-06			B16W90	0.60	1.02			82		50			49	06/12/03	06/16	GRB-222
R305013-07			LCS (QC ID=44676)	0.55	1.00			93		50				06/12/03	06/15	GRB-203
R305013-08			BLK (QC ID=44677)	0.54	1.00			97		50				06/12/03	06/16	GRB-223
R305013-09			Duplicate (R305013-04)	0.55	1.05			84		56			47	06/12/03	06/15	GRB-221
			(QC ID=44678)													

Nominal values and limits from method 15 1.00 20-105 50 180

METHOD SUMMARIES

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SUMMARY DATA SECTION

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Lab id EBRLNE
 Protocol Hanford
 Version Ver 1.0
 Form DVD-LMS
 Version 3.06
 Report date 06/17/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2194

Test TC Matrix SOLID
SDG 7507
Contact Melissa C. Mannion

LAB METHOD SUMMARY, cont.

TECHNETIUM 99 IN SOIL
BETA COUNTING

Client Hanford
Contract No. 630
Contract SDG H2194

PROCEDURES	REFERENCE	TC99_TR_SEP_LSC
CP-071	Soil Dissolution, > 1.0g Aliquot, rev 2	
CP-021	Preparation of Tc-99m Tracer, rev 2	
CP-002	Q.C. Preparation, rev 4	
CP-003	Addition of Carriers and Tracers, rev 5	
CP-542	Technetium-99 Purification (Soil) by Extraction Chromatography, rev 2	
CP-008	Heavy Element Electroplating, rev 7	

AVERAGES \pm 2 SD	MDA	<u>0.56</u>	\pm	<u>0.050</u>
FOR 9 SAMPLES	YIELD	<u>89</u>	\pm	<u>9</u>

METHOD SUMMARIES

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SUMMARY DATA SECTION

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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2194

Test I Matrix SOLID
SDG 7507
Contact Melissa C. Mannion

LAB METHOD SUMMARY

IODINE 129 IN SOIL

GAMMA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG H2194

RESULTS

LAB RAW SUF-
SAMPLE ID TEST FIX PLANCHET CLIENT SAMPLE ID Iodine 129

Preparation batch 7060-151

R305013-01	7507-001	B16W79	U
R305013-02	7507-002	B16W80	U
R305013-03	7507-003	B16W81	U
R305013-04	7507-004	B16W82	U
R305013-05	7507-005	B16W83	U
R305013-06	7507-006	B16W90	U
R305013-07	7507-007	LCS (QC ID=44676)	ok
R305013-08	7507-008	BLK (QC ID=44677)	U
R305013-09	7507-009	Duplicate (R305013-04)	- U

Nominal values and limits from method RDLs (pCi/g) 2.0
200-PW-2/200-PW-4 OU-Borehole Soil

METHOD PERFORMANCE

LAB	RAW	SUF-	MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS	ANAL-
SAMPLE ID	TEST FIX	CLIENT SAMPLE ID	pCi/g	g	FAC	TION	%	%	min	keV	KeV	HELD PREPARED	YZED DETECTOR

Preparation batch 7060-151 2σ prep error 10.0 % Reference Lab Notebook 7060 pg. 151

R305013-01	B16W79	1.8	0.500	65	932	37	06/04/03	06/04	XSPEC-004
R305013-02	B16W80	2.1	0.500	58	1023	38	06/04/03	06/05	XSPEC-004
R305013-03	B16W81	1.9	0.510	56	1394	38	06/04/03	06/06	XSPEC-004
R305013-04	B16W82	2.0	0.500	53	1436	39	06/04/03	06/07	XSPEC-004
R305013-05	B16W83	2.3	0.500	51	1137	40	06/04/03	06/08	XSPEC-004
R305013-06	B16W90	4.4	0.500	36	616	43	06/04/03	06/10	XSPEC-004
R305013-07	LCS (QC ID=44676)	2.6	0.500	89	807		06/04/03	06/10	XSPEC-004
R305013-08	BLK (QC ID=44677)	1.6	0.500	85	625		06/04/03	06/11	XSPEC-004
R305013-09	Duplicate (R305013-04)	2.9	0.500	55	669	43	06/04/03	06/11	XSPEC-004
	(QC ID=44678)								

Nominal values and limits from method 2.0 0.500 20-105 300 180

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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2194

Test I Matrix SOLID
SDG 7507
Contact Melissa C. Mannion

LAB METHOD SUMMARY, cont.

IODINE 129 IN SOIL

GAMMA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG H2194

PROCEDURES	REFERENCE	I129_SEP_LEPS_GS
	CP-024	Iodine-129, Sample Dissolution, rev 3
	CP-530	Iodine-129 Purification, rev 0

AVERAGES \pm 2 SD	MDA	<u>2.4</u>	\pm	<u>1.7</u>
FOR 9 SAMPLES	YIELD	<u>61</u>	\pm	<u>33</u>

METHOD SUMMARIES

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SUMMARY DATA SECTION

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Protocol Hanford
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Form DVD-LMS
Version 3.06
Report date 06/17/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2194

Test C Matrix SOLID
 SDG 7507
 Contact Melissa C. Mannion

LAB METHOD SUMMARY

CARBON 14 IN SOIL
 LIQUID SCINTILLATION COUNTING

Client Hanford
 Contract No. 630
 Contract SDG H2194

RESULTS

LAB RAW SUF-
 SAMPLE ID TEST FIX PLANCHET CLIENT SAMPLE ID Carbon 14

Preparation batch 7060-151

R305013-01	7507-001	B16W79	U
R305013-02	7507-002	B16W80	U
R305013-03	7507-003	B16W81	U
R305013-04	7507-004	B16W82	U
R305013-05	7507-005	B16W83	U
R305013-06	7507-006	B16W90	U
R305013-07	7507-007	LCS (QC ID=44676)	ok
R305013-08	7507-008	BLK (QC ID=44677)	U
R305013-09	7507-009	Duplicate (R305013-04)	- U

Nominal values and limits from method RDLs (pCi/g) 50
 200-PW-2/200-PW-4 OU-Borehole Soil

METHOD PERFORMANCE

LAB RAW SUF- MDA ALIQ PREP DILU- YIELD EFF COUNT FWHM DRIFT DAYS ANAL-
 SAMPLE ID TEST FIX CLIENT SAMPLE ID pCi/g g FAC TION % % min keV KeV HELD PREPARED YZED DETECTOR

Preparation batch 7060-151 2σ prep error 10.0 % Reference Lab Notebook 7060 pg. 151

R305013-01	B16W79	3.0	0.328	100	100	30	05/28/03	05/28	LSC-004
R305013-02	B16W80	2.6	0.380	100	100	30	05/28/03	05/28	LSC-004
R305013-03	B16W81	3.0	0.331	100	100	29	05/28/03	05/28	LSC-004
R305013-04	B16W82	2.8	0.350	100	100	29	05/28/03	05/28	LSC-004
R305013-05	B16W83	2.9	0.341	100	100	30	05/28/03	05/29	LSC-004
R305013-06	B16W90	2.7	0.374	100	100	31	05/28/03	05/29	LSC-004
R305013-07	LCS (QC ID=44676)	9.0	0.328	100	10		05/28/03	05/29	LSC-004
R305013-08	BLK (QC ID=44677)	3.0	0.328	100	100		05/28/03	05/28	LSC-004
R305013-09	Duplicate (R305013-04) (QC ID=44678)	2.6	0.386	100	100	30	05/28/03	05/29	LSC-004

Nominal values and limits from method 50 0.328 50 180

METHOD SUMMARIES

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SUMMARY DATA SECTION

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 Protocol Hanford
 Version Ver 1.0
 Form DVD-LMS
 Version 3.06
 Report date 06/17/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2194

Test C Matrix SOLID

SDG 7507

Contact Melissa C. Mannion

LAB METHOD SUMMARY, cont.

CARBON 14 IN SOIL

LIQUID SCINTILLATION COUNTING

Client Hanford

Contract No. 630

Contract SDG H2194

PROCEDURES REFERENCE C14_COX_LSC

CP-251 Tritium/Carbon-14 Oxidation, rev 5

AVERAGES \pm 2 SD

MDA 3.5 \pm 4.1

FOR 9 SAMPLES

YIELD 100 \pm 0

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Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

Form DVD-LMS

Version 3.06

Report date 06/17/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2194

Test H Matrix SOLID
SDG 7507
Contact Melissa C. Mannion

LAB METHOD SUMMARY

TRITIUM IN SOIL

LIQUID SCINTILLATION COUNTING

Client Hanford
Contract No. 630
Contract SDG H2194

RESULTS

LAB	RAW	SUF-		
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Tritium
Preparation batch 7060-151				
R305013-01	7507-001	B16W79		134
R305013-02	7507-002	B16W80		152
R305013-03	7507-003	B16W81		130
R305013-04	7507-004	B16W82		154
R305013-05	7507-005	B16W83		267
R305013-06	7507-006	B16W90		147
R305013-07	7507-007	LCS (QC ID=44676)		ok
R305013-08	7507-008	BLK (QC ID=44677)		U
R305013-09	7507-009	Duplicate (R305013-04)		ok
R305013-10	7507-010	Spike (R305013-04)		ok X

Nominal values and limits from method RDLs (pCi/g) 400
200-PW-2/200-PW-4 OU-Borehole Soil

METHOD PERFORMANCE

LAB	RAW	SUF-	MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS	ANAL-
SAMPLE ID	TEST FIX	CLIENT SAMPLE ID	pCi/g	g	FAC	TION	%	%	min	keV	KeV	HELD PREPARED	YZED DETECTOR
Preparation batch 7060-151 2σ prep error 10.0 % Reference Lab Notebook 7060 pg. 151													
R305013-01		B16W79	0.26	20.9			50		73			43 06/10/03 06/10	LSC-005
R305013-02		B16W80	0.27	21.4			48		65			44 06/10/03 06/11	LSC-005
R305013-03		B16W81	0.26	20.9			46		80			43 06/10/03 06/11	LSC-005
R305013-04		B16W82	0.27	20.2			50		62			43 06/10/03 06/11	LSC-005
R305013-05		B16W83	0.37	20.7			49		38			43 06/10/03 06/11	LSC-005
R305013-06		B16W90	0.27	21.0			49		69			44 06/10/03 06/11	LSC-005
R305013-07		LCS (QC ID=44676)	0.30	20.0			33		120			06/10/03 06/11	LSC-005
R305013-08		BLK (QC ID=44677)	0.30	20.0			33		120			06/10/03 06/11	LSC-005
R305013-09		Duplicate (R305013-04)	0.26	21.3			53		60			43 06/10/03 06/11	LSC-005
		(QC ID=44678)											
R305013-10		Spike (R305013-04)	0.30	20.8			53		46			43 06/10/03 06/11	LSC-005
		(QC ID=44679)											

Nominal values and limits from method 400 20.0 25 180

METHOD SUMMARIES

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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2194

Test H Matrix SOLID

SDG 7507

Contact Melissa C. Mannion

LAB METHOD SUMMARY, cont.

TRITIUM IN SOIL

LIQUID SCINTILLATION COUNTING

Client Hanford

Contract No. 630

Contract SDG H2194

PROCEDURES	REFERENCE	906.0_H3_LSC
	CP-216	Tritium in Solid Samples by Azeotropic Distillation, rev 6

AVERAGES \pm 2 SD	MDA	<u>0.29</u> \pm <u>0.068</u>
FOR 10 SAMPLES	YIELD	<u>46</u> \pm <u>15</u>

METHOD SUMMARIES

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Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

Form DVD-LMS

Version 3.06

Report date 06/17/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2194

Test NI L Matrix SOLIDSDG 7507Contact Melissa C. Mannion

LAB METHOD SUMMARY

NICKEL 63 IN SOIL

LIQUID SCINTILLATION COUNTING

Client HanfordContract No. 630Contract SDG H2194

RESULTS

LAB RAW SUF-
SAMPLE ID TEST FIX PLANCHET CLIENT SAMPLE ID Nickel 63

Preparation batch 7060-151

R305013-01	7507-001	B16W79	U
R305013-02	7507-002	B16W80	2.64
R305013-03	7507-003	B16W81	U
R305013-04	7507-004	B16W82	14.4
R305013-05	7507-005	B16W83	U
R305013-06	7507-006	B16W90	U
R305013-07	7507-007	LCS (QC ID=44676)	ok
R305013-08	7507-008	BLK (QC ID=44677)	U
R305013-09	7507-009	Duplicate (R305013-04)	ok
R305013-10	7507-010	Spike (R305013-04)	ok

Nominal values and limits from method RDLs (pCi/g) 30

200-PW-2/200-PW-4 OU-Borehole Soil

METHOD PERFORMANCE

LAB RAW SUF- MDA ALIQ PREP DILU- YIELD EFF COUNT FWHM DRIFT DAYS ANAL-
SAMPLE ID TEST FIX CLIENT SAMPLE ID pCi/g g FAC TION % % min keV KeV HELD PREPARED YZED DETECTOR

Preparation batch 7060-151 2σ prep error 10.0 % Reference Lab Notebook 7060 pg. 151

R305013-01	B16W79	2.5	0.500	100	100	33	05/30/03	05/31	LSC-004
R305013-02	B16W80	2.6	0.500	100	100	33	05/30/03	05/31	LSC-004
R305013-03	B16W81	2.5	0.500	100	100	32	05/30/03	05/31	LSC-004
R305013-04	B16W82	2.5	0.500	100	100	32	05/30/03	05/31	LSC-004
R305013-05	B16W83	2.5	0.500	100	100	32	05/30/03	05/31	LSC-004
R305013-06	B16W90	2.6	0.500	100	100	33	05/30/03	05/31	LSC-004
R305013-07	LCS (QC ID=44676)	2.9	0.500	100	69		05/30/03	05/31	LSC-004
R305013-08	BLK (QC ID=44677)	2.4	0.500	100	100		05/30/03	05/31	LSC-004
R305013-09	Duplicate (R305013-04)	2.5	0.500	100	100	32	05/30/03	05/31	LSC-004
	(QC ID=44678)								
R305013-10	Spike (R305013-04)	5.8	0.500	100	18	32	05/30/03	05/31	LSC-004
	(QC ID=44679)								

Nominal values and limits from method 30 0.500 30-105 50 180

METHOD SUMMARIES

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SUMMARY DATA SECTION

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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2194

Test NI L Matrix SOLID

SDG 7507

Contact Melissa C. Mannion

LAB METHOD SUMMARY, cont.

NICKEL 63 IN SOIL

LIQUID SCINTILLATION COUNTING

Client Hanford

Contract No. 630

Contract SDG H2194

PROCEDURES	REFERENCE	NI63_LSC
	CP-060	Soil Preparation, rev 4
	CP-071	Soil Dissolution, > 1.0g Aliquot, rev 2
	CP-281	Nickel-63 Purification By Extraction Chromatography, rev 0

AVERAGES \pm 2 SD
FOR 10 SAMPLES

MDA 2.9 \pm 2.1
YIELD 100 \pm 0

METHOD SUMMARIES

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EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2194

SDG 7507
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG H2194

SAMPLE SUMMARY

The Sample and QC Summary Reports show all samples, including QC samples, reported in one Sample Delivery Group (SDG).

The Sample Summary Report fully identifies client samples and gives the corresponding lab sample identification. The QC Summary Report shows at the sample level how the lab organized the samples into batches and generated QC samples. The Preparation Batch and Method Summary Reports show this at the analysis level.

The following notes apply to these reports:

- * LAB SAMPLE ID is the lab's primary identification for a sample.
- * DEPARTMENT SAMPLE ID is an alternate lab id, for example one assigned by a radiochemistry department in a lab.
- * CLIENT SAMPLE ID is the client's primary identification for a sample. It includes any sample preparation done by the client that is necessary to identify the sample.
- * QC BATCH is a lab assigned code that groups samples to be processed and QCed together. These samples should have similar matrices.

QC BATCH is not necessarily the same as SDG, which reflects samples received and reported together.

- * All Lab Control Samples, Method Blanks, Duplicates and Matrix Spikes are shown that QC any of the samples. Due to possible reanalyses, not all results for all these QC samples may be relevant to the SDG. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.

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EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2194

SDG 7507
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG_H2194

PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches in one Sample Delivery Group (SDG) with information necessary to check the completeness and consistency of the SDG.

The following notes apply to this report:

- * The preparation batches are shown in the same order as the Method Summary Reports are printed.
- * Only analyses of planchets relevant to the SDG are included.
- * Each preparation batch should have at least one Method Blank and LCS in it to validate client sample results.
- * The QUALIFIERS shown are all qualifiers other than U, J, B, L and H that occur on any analysis in the preparation batch. The Method Summary Report has these qualifiers on a per sample basis.

These qualifiers should be reviewed as follows:

- X Some data has been manually entered or modified. Transcription errors are possible.
- P One or more results are 'preliminary'. The data is not ready for final reporting.
- 2 There were two or more results for one analyte on one planchet imported at one time. The results in DVD may not be the same as on the raw data sheets.

Other lab defined qualifiers may occur. In general, these should be addressed in the SDG narrative.

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SAMPLE DELIVERY GROUP H2194

SDG 7507
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG H2194

WORK SUMMARY

The Work Summary Report shows all samples, including QC samples, and all relevant analyses in one Sample Delivery Group (SDG). This report is often useful as supporting documentation for an invoice.

The following notes apply to this report:

- * TEST is a code for the method used to measure associated analytes. Results and related information for each analyte are on the Data Sheet Report. In special cases, a test code used in the summary data section is not the same as in associated raw data. In this case, both codes are shown on the Work Summary.
- * SUFFIX is the lab's code to distinguish multiple analyses (recounts, reworks, reanalyses) of a fraction of the sample. The suffix indicates which result is being reported. An empty suffix normally identifies the first attempt to analyze the sample.
- * The LAB SAMPLE ID, TEST and SUFFIX uniquely identify all supporting data for a result. The Method Summary Report for each TEST has method performance data, such as yield, for each lab sample id and suffix and procedures used in the method.
- * PLANCHET is an alternate lab identifier for work done for one test. It, combined with the TEST and SUFFIX, may be the best link to raw data.
- * For QC samples, only analyses that directly QC some regular sample are shown. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.
- * The SAS (Special Analytical Services) Number is a client or lab assigned code that reflects special processing for samples, such as rapid turn around. Counts of tests done are lists by SAS number since it is likely to affect prices.

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SAMPLE DELIVERY GROUP H2194

SDG 7507
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG H2194

DATA SHEET

The Data Sheet Report shows all results and primary supporting information for one client sample or Method Blank. This report corresponds to both the CLP Inorganics and Organics Data Sheet.

The following notes apply to this report:

- * TEST is a code for the method used to measure an analyte. If the TEST is empty, no data is available; the analyte was not analyzed for.
- * The LAB SAMPLE ID and TEST uniquely identify work within the Summary Data Section of a Data Package. The Work Summary and Method Summary Reports further identify raw data that underlies this work.

The Method Summary Report for each TEST has method performance data, such as yield, for each Lab Sample ID and a list of procedures used in the method.

- * ERRORS can be labeled TOTAL or COUNT. TOTAL implies a preparation (non-counting method) error has been added, as square root of sum of squares, to the counting error denoted by COUNT. The preparation errors, which may vary by preparation batch, are shown on the Method Summary Report.
- * A RESULT can be 'N.R.' (Not Reported). This means the lab did this work but chooses not to report it now, possibly because it was reported at another time.
- * When reporting a Method Blank, a RESULT can be 'N.A.' (Not Applicable). This means there is no reported client sample work in the same preparation batch as the Blank's result. This is likely to occur when the Method Blank is associated with reanalyses of selected work for a few samples in the SDG.

The following qualifiers are defined by the DVD system:

U The RESULT is less than the MDA (Minimum Detectable Activity).

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SAMPLE DELIVERY GROUP H2194

SDG 7507
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG H2194

DATA SHEET

If the MDA is blank, the ERROR is used as the limit.

- J The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.
 - B A Method Blank associated with this sample had a result without a U flag and, after correcting for possibly different aliquots, that result is greater than or equal to the MDA for this sample.
- Normally, B is not assigned if U is. When method blank subtraction is shown on this report, B flags are assigned based on the unsubtracted values while U's are assigned based on the subtracted ones. Both flags can be assigned in this case.
- For each sample result, all Method Blank results in the same preparation batch are compared. The Method Summary Report documents this and other QC relationships.
- L Some Lab Control Sample that QC's this sample had a low recovery. The lab can disable assignment of this qualifier.
 - H Similar to 'L' except the recovery was high.
 - P The RESULT is 'preliminary'.
 - X Some data necessary to compute the RESULT, ERROR or MDA was manually entered or modified.
 - 2 There were two or more results available for this analyte. The reported result may not be the same as in the raw data.

Other qualifiers are lab defined. Definitions should be in the SDG narrative.

The following values are underlined to indicate possible problems:

- * An MDA is underlined if it is bigger than its RDL.

REPORT GUIDES

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SUMMARY DATA SECTION

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Lab id EBRINE
Protocol Hanford
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Version 3.06
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EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2194

SDG 7507
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG H2194

DATA SHEET

- * An ERROR is underlined if the 1.645 sigma counting error is bigger than both the MDA and the RESULT, implying that the MDA may not be a good estimate of the 'real' minimum detectable activity.
- * A negative RESULT is underlined if it is less than the negative of its 2 sigma counting ERROR.
- * When reporting a Method Blank, a RESULT is underlined if greater than its MDA. If the MDA is blank, the 2 sigma counting error is used in the comparison.

REPORT GUIDES

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SUMMARY DATA SECTION

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SAMPLE DELIVERY GROUP H2194

SDG 7507
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG_H2194

LAB CONTROL SAMPLE

The Lab Control Sample Report shows all results, recoveries and primary supporting information for one Lab Control Sample.

The following notes apply to this report:

- * All fields in common with the Data Sheet Report have similar usage. Refer to its Report Guide for details.
- * An amount ADDED is the lab's value for the actual amount spiked into this sample with its ERROR an estimate of the error of this amount.

An amount added is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

- * REC (Recovery) is RESULT divided by ADDED expressed as a percent.
- * The first, computed limits for the recovery reflect:
 1. The error of RESULT, including that introduced by rounding the result prior to printing.

If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.
 2. The error of ADDED.
 3. A lab specified, per analyte bias. The bias changes the center of the computed limits.
- * The second limits are protocol defined upper and lower QC limits for the recovery.
- * The recovery is underlined if it is outside either of these ranges.

REPORT GUIDES

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SUMMARY DATA SECTION

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Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 06/17/03

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2194

SDG 7507
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG H2194

DUPLICATE

The Duplicate Report shows all results, differences and primary supporting information for one Duplicate and associated Original sample.

The following notes apply to this report:

- * All fields in common with the Data Sheet Report have similar usage. This applies both to the Duplicate and Original sample data. Refer to the Data Sheet Report Guide for details.

If the Duplicate has data for a TEST and the lab did not do this test to the Original, the Original's RESULTS are underlined.

- * The RPD (Relative Percent Difference) is the absolute value of the difference of the RESULTS divided by their average expressed as a percent.

If both RESULTS are less than their MDAs, no RPD is computed and a '-' is printed.

For an analyte, if the lab did work for both samples but has data for only one, the MDA from the sample with data is used as the other's result in the RPD.

- * The first, computed limit is the sum, as square root of sum of squares, of the errors of the results divided by the average result as a percent, hence the relative error of the difference rather than the error of the relative difference. The errors include those introduced by rounding the RESULTS prior to printing.

If this limit is labeled TOT, it includes the preparation error in the RESULTS. If labeled CNT, it does not.

This value reported for this limit is at most 999.

- * The second limit for the RPD is the larger of:
1. A fixed percentage specified in the protocol.

REPORT GUIDES

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SUMMARY DATA SECTION

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Lab id EBRINE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 06/17/03

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2194

SDG 7507
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG_H2194

DUPLICATE

2. A protocol factor (typically 2) times the average MDA as a percent of the average result. This limit applies when the results are close to the MDAs.

- * The RPD is underlined if it is greater than either limit.
- * If specified by the lab, the second limit column is replaced by the Difference Error Ratio (DER), which is the absolute value of the difference of the results divided by the quadratic sum of their one sigma errors, the same errors as used in the first limit.

Except for differences due to rounding, the DER is the same as the RPD divided by the first RPD limit with the limit scaled to 1 sigma.

- * The DER is underlined if it is greater than the sigma factor, typically 2 or 3, shown in the header for the first RPD limit.

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2194

SDG 7507
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG H2194

MATRIX SPIKE

The Matrix Spike Report shows all results, recoveries and primary supporting information for one Matrix Spike and associated Original sample.

The following notes apply to this report:

- * All fields in common with the Data Sheet Report have similar usage. This applies both to the Spiked and Original sample data. Refer to the Data Sheet Report Guide for details.

If the Spike has data for a TEST and the lab did not do this test to the Original, the Original's RESULTS are underlined.

- * An amount ADDED is the lab's value for the actual amount spiked into the Spike sample with its ERROR an estimate of the error of this amount.

An amount is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

- * REC (Recovery) is the Spike RESULT minus the Original RESULT divided by ADDED expressed as a percent.
- * The first, computed limits for the recovery reflect:
 1. The errors of the two RESULTS, including those introduced by rounding them prior to printing.

If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.
 2. The error of ADDED.
 3. A lab specified, per analyte bias. The bias changes the center of the computed limits.
- * The second limits are protocol defined upper and lower QC limits

REPORT GUIDES

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SUMMARY DATA SECTION

Page 44

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 06/17/03

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2194

SDG 7507
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG H2194

MATRIX SPIKE

for the recovery.

These limits are left blank if the Original RESULT is more than a protocol defined factor (typically 4) times ADDED. This is a way of accounting for that when the spike is small compared to the amount in the original sample, the recovery is unreliable.

- * The recovery is underlined (out of spec) if it is outside either of these ranges.

REPORT GUIDES

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SUMMARY DATA SECTION

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Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 06/17/03

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2194

SDG 7507
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG_H2194

METHOD SUMMARY

The Method Summary Report has two tables. One shows up to five results measured using one method. The other has performance data for the method. There is one report for each TEST, as used on the Data Sheet Report.

The following notes apply to this report:

- * Each table is subdivided into sections, one for each preparation batch. A preparation batch is a group of aliquots prepared at roughly the same time in one work area of the lab using the same method.

There should be Lab Control Sample and Method Blank results in each preparation batch since this close correspondence makes the QC meaningful. Depending on lab policy, Duplicates need not occur in each batch since they QC sample dependencies such as matrix effects.

- * The RAW TEST column shows the test code used in the raw data to identify a particular analysis if it is different than the test code in the header of the report. This occurs in special cases due to method specific details about how the lab labels work.

The Lab Sample or Planchet ID combined with the (Raw) Test Code and Suffix uniquely identify the raw data for each analysis.

- * If a result is less than both its MDA and RDL, it is replaced by just 'U' on this report. If it is greater than or equal to the RDL but less than the MDA, the result is shown with a 'U' flag.

The J and X flags are as on the data sheet.

- * Non-U results for Method Blanks are underlined to indicate possible contamination of other samples in the preparation batch. The Method Blank Report has supporting data.
- * Lab Control Sample and Matrix Spike results are shown as: ok, No data, LOW or HIGH, with the last two underlined. 'No data'

REPORT GUIDES

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SUMMARY DATA SECTION

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Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 06/17/03

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2194

SDG 7507
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG H2194

METHOD SUMMARY

means no amount ADDED was specified. 'LOW' and 'HIGH' correspond to when the recovery is underlined on the Lab Control Sample or Matrix Spike Report. See these reports for supporting data.

- * Duplicate sample results are shown as: ok, No data, or OUT, with the last two underlined. 'No data' means there was no original sample data found for this duplicate. 'OUT' corresponds to when the RPD is underlined on the Duplicate Report. See this report for supporting data.
- * If the MDA column is labeled 'MAX MDA', there was more than one result measured by the reported method and the MDA shown is the largest MDA. If not all these results have the same RDL, the MAX MDA reflects only those results with RDL equal to the smallest one.

MDAs are underlined if greater than the printed RDL.

- * Aliquots are underlined if less than the nominal value specified for the method.
- * Preparation factors are underlined if greater than the nominal value specified for the method.
- * Dilution factors are underlined if greater than the nominal value specified for the method.
- * Residues are underlined if outside the range specified for the method. Residues are not printed if yields are.
- * Yields, which may be gravimetric, radiometric or some type of recovery depending on the method, are underlined if outside the range specified for the method.
- * Efficiencies are underlined if outside the range specified for the method. Efficiencies are detector and geometry dependent so this test is only approximate.

REPORT GUIDES

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SUMMARY DATA SECTION

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Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 06/17/03

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2194

SDG 7507
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG H2194

METHOD SUMMARY

- * Count times are underlined if less than the nominal value specified for the method.
- * Resolutions (as FWHM; Full Width at Half Max) are underlined if greater than the method specified limit.
- * Tracer drifts are underlined if their absolute values are greater than the method specified limit. Tracer drifts are not printed if percent moistures are.
- * Days Held are underlined if greater than the holding time specified in the protocol.
- * Analysis dates are underlined if before their planchet's preparation date or, if a limit is specified, too far after it.

For some methods, ratios as percentages and error estimates for them are computed for pairs of results. A ratio column header like '1÷3' means the ratio of the first result column and the third result column.

Ratios are not computed for Lab Control Sample, Method Blank or Matrix Spike results since their matrices are not necessarily similar to client samples'.

The error estimate for a ratio of results from one planchet reflects only counting errors since other errors should be correlated. For a ratio involving different planchets, if QC limits are computed based on total errors, the error for the ratio allows for the preparation errors for the planchets.

The ratio is underlined (out of spec) if the absolute value of its difference from the nominal value is greater than its error estimate. If no nominal value is specified, this test is not done.

For Gross Alpha or Gross Beta results, there may be a column showing the sum of other Alpha or Beta emitters. This sum includes all relevant

REPORT GUIDES

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SUMMARY DATA SECTION

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Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 06/17/03

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2194

SDG 7507
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG_H2194

METHOD SUMMARY

results in the DVD database, whether reported or not. Results in the sum are weighted by a particles/decay value specified by the lab for each relevant analyte. Results less than their MDA are not included. No sums are computed for Lab Control, Method Blank or Matrix Spike samples since their various planchets may not be physically related.

If a ratio of total isotopic to Gross Alpha or Beta is shown, the error for the ratio reflects both the error in the Gross result and the sum, as square root of sum of squares, of the errors in the isotopic results.

For total elemental uranium or thorium results, there may be a column showing the total weight computed from associated isotopic results. Ignoring results less than their MDAs, this is a weighted sum of the isotopic results. The weights depend on the molecular weight and half-life of each isotope so as to convert activities (decays) to weight (atoms).

If a ratio of total computed to measured elemental uranium or thorium is shown, the error for the ratio reflects the errors in all the measurements.

REPORT GUIDES

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SUMMARY DATA SECTION

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Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 06/17/03

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-62		Page 1 of 1		
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (12.5'-15')		SDG H2194 (7507)		SAF No. F03-006		Air Quality <input type="checkbox"/>			
Ice Chest No. ERC 01 017		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To EBERLINE SERVICES (Formerly TMA)		Offsite Property No. A030248		Bill of Lading/Air Bill No. 566 057C							
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None		
				Type of Container	aG	aG	aG	aG	aG		
				No. of Container(s)	1	1	1	1	1		
				Volume	120mL	60mL	120mL	60mL	60mL		
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions.	Tritium - H3			
Sample No.	Matrix *	Sample Date	Sample Time								
B16W79	SOIL	4/28/03	1350				X	X			
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS ** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. **The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. <i>4/22/03</i> (1) Technetium-99; Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237 Personnel not available to relinquish samples from the 3728 Ref # <u>1A</u> on <u>511 103</u>			
Relinquished By/Removed From <i>Greg Thomas</i>		Date/Time <i>4/28/03</i>		Received By/Stored In <i>REF 1A 3728</i>		Date/Time <i>42803 1645</i>					
Relinquished By/Removed From <i>REF 1A 3728</i>		Date/Time <i>5103 1100</i>		Received By/Stored In <i>SDGAL/Ref</i>		Date/Time <i>5103 1100</i>					
Relinquished By/Removed From <i>SDGAL/Ref</i>		Date/Time <i>5103 1100</i>		Received By/Stored In <i>FED EX</i>		Date/Time					
Relinquished By/Removed From <i>Ref 1A</i>		Date/Time		Received By/Stored In <i>Ref 1A</i>		Date/Time <i>1000 5-2-03</i>					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		Matrix * S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WT=Wipe L=Liquid V=Vegetation X=Other			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
LABORATORY SECTION		Received By		Title				Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time			

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-006-63		Page 1 of 1	
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (17.5°-20°) SDG HA 194 (7507)		SAF No. F03-006		Air Quality <input type="checkbox"/>			
Ice Chest No. ERC 01 017		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express			
Shipped To EBERLINE SERVICES (Formerly TMA)		Offsite Property No. A030 248		Bill of Lading/Air Bill No. 885 0SPC					
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage		Preservation	Cool 4C	Cool 4C	Cool 4C	None	None		
		Type of Container	aG	aG	aG	aG	aG		
		No. of Container(s)	1	1	1	1	1		
		Volume	120mL	60mL	120mL	60mL	60mL		
SAMPLE ANALYSIS			Chromium Hex - 7196	NO ₂ /NO ₃ - 553.2	Oil & Grease - 413.1	See item (1) in Special Instructions.	Tritium - H3		
			<i>ASm 4/22/03</i>						
Sample No.	Matrix *	Sample Date	Sample Time						
B16W80'	SOIL	4/28/03	1510			X	X		
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *	
Relinquished By/Removed From <i>Greg Thomas</i>		Date/Time 4/28/03		Received By/Stored In <i>R&F 1A</i>		Date/Time 3728 428 03 1645		** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. <i>ASm 4/22/03</i> report both hexose and diesel range compounds from WIPM-D analysis. (1) Technetium-99; Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237 Personnel not available to relinquish samples from the 3728 Ref # <i>1A</i> on <i>5/1/03</i>	
Relinquished By/Removed From <i>R&F 1A</i>		Date/Time 5/1/03 1100		Received By/Stored In <i>SIGALD/SL</i>		Date/Time 5/1/03 1100			
Relinquished By/Removed From <i>SIGALD/SL</i>		Date/Time 5/1/03 1100		Received By/Stored In <i>FED EX</i>		Date/Time			
Relinquished By/Removed From <i>FED EX</i>		Date/Time		Received By/Stored In <i>SL 3-2-03</i>		Date/Time 1000			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
LABORATORY SECTION		Received By		Title		Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time			

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-65		Page 1 of 1				
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days			
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (37.5°-40°)		SDA 42194 (7507)		SAF No. F03-006		Air Quality <input type="checkbox"/>					
Ice Chest No. ERC 01 017		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express							
Shipped To EBERLINE SERVICES (Formerly TMA)		Offsite Property No. A030248				Bill of Lading/Air Bill No. SGE 03PC							
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation		Cool 4C	Cool 4C	Cool 4C	None	None			
				Type of Container		aG	aG	aG	aG	aG			
				No. of Container(s)		1	1	1	1	1			
				Volume		120mL	60mL	120mL	60mL	60mL			
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions.	Tritium - H3					
								TIL TO:					
Sample No.	Matrix *	Sample Date	Sample Time										
B16W82	SOIL	4/29/03	0900				X	X			B16W82 (USEF)		
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS					
Relinquished By/Removed From <i>[Signature]</i>		Date/Time 4/29/03 1400		Received By/Stored In <i>[Signature]</i>		Date/Time 4/29/03 1400		** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. <i>APR 4/22/03</i> (1) Technetium-99; Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237 Personnel not available to relinquish samples from the 3728 Ref # <i>1B</i> on <i>5/1/03</i>					
Relinquished By/Removed From <i>[Signature]</i>		Date/Time 4-29-03 1400		Received By/Stored In <i>[Signature]</i>		Date/Time 4-29-03 1400							
Relinquished By/Removed From <i>[Signature]</i>		Date/Time 5/03 1100		Received By/Stored In <i>[Signature]</i>		Date/Time 5/03 1100							
Relinquished By/Removed From <i>[Signature]</i>		Date/Time 5/03 1100		Received By/Stored In <i>[Signature]</i>		Date/Time 5/03 1100							
Relinquished By/Removed From <i>[Signature]</i>		Date/Time 5-20-03 1000		Received By/Stored In <i>[Signature]</i>		Date/Time 5-20-03 1000							
Relinquished By/Removed From <i>[Signature]</i>		Date/Time		Received By/Stored In <i>[Signature]</i>		Date/Time							
LABORATORY SECTION		Received By		Title				Date/Time					
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time					

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-73		Page 1 of 1						
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days					
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (17.5°-20°)		SDG 42194 (7507)		SAF No. F03-006		Air Quality <input type="checkbox"/>							
Ice Chest No. ERC 01 017		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express									
Shipped To EBERLINE SERVICES (Formerly TMA)		Offsite Property No. A030248				Bill of Lading/Air Bill No. SGE OSPC									
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation		Cool 4C	Cool 4C	Cool 4C	None	None					
				Type of Container		aG	aG	aG	aG	aG					
				No. of Container(s)		1	1	1	1	1					
				Volume		120mL	60mL	120mL	60mL	60mL					
SAMPLE ANALYSIS				Chromium Hex - 7196	NO ₂ /NO ₃ - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions.	Tritium - H3							
Sample No.	Matrix *	Sample Date	Sample Time												
B16W90	SOIL	4/28/03	1510				X	X							
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix * S=Soil SB=Soil/Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WT=Wipe L=Liquid V=Vegetation X=Other							
Relinquished By/Removed From <i>Greg Thomas</i>		Date/Time 1645		Received By/Stored In <i>REF 1A 3728</i>		Date/Time 42803 1645						** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. **The laboratory is to report both kerosene and diesel range compounds from WTTT-D analysis. <i>ASR 4/22/03</i> (1) Technetium-99; Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237 Personnel not available to relinquish samples from the 3728 Ref # <i>1A</i> on <i>5/1/02</i>			
Relinquished By/Removed From <i>REF 1A</i>		Date/Time 5103 1100		Received By/Stored In <i>SIGAL</i>		Date/Time 5103 1100									
Relinquished By/Removed From <i>SSAC/CPH</i>		Date/Time 5103 1100		Received By/Stored In <i>FED EX</i>		Date/Time									
Relinquished By/Removed From <i>FED EX</i>		Date/Time		Received By/Stored In <i>Am G</i>		Date/Time 5-2-03 1000									
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time									
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time									
LABORATORY SECTION		Received By		Title				Date/Time							
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time							

**ANALYTICAL SERVICES GROUP**

Richmond, CA Laboratory

SAMPLE RECEIPT CHECKLIST

Client: FLR Date/Time received 1000 5-2-03

CoC No. F03-006-62,63,64,65,66,73

Container I.D. No. _____ Requested TAT (Days) 45 P.O. Received Yes [] No []

INSPECTION

1. Custody seals on shipping container intact? Yes [☒] No [] N/A []
2. Custody seals on shipping container dated & signed? Yes [☒] No [] N/A []
3. Custody seals on sample containers intact? Yes [☒] No [] N/A []
4. Custody seals on sample containers dated & signed? Yes [☒] No [] N/A []
5. Packing material is: Wet [] Dry [☒]
6. Number of samples in shipping container: 6
7. Number of containers per sample: 2 (Or see CoC _____)
8. Paperwork agrees with samples? Yes [☒] No []
9. Samples have: Tape [] Hazard labels [] Rad labels [☒] Appropriate sample labels [☒]
10. Samples are: In good condition [☒] Leaking [] Broken Container [] Missing []
11. Samples are: Preserved [] Not preserved [☒] Preservative _____
12. Describe any anomalies: _____

13. Was P.M. notified of any anomalies? Yes [] No [] Date _____

14. Received by [Signature] Date: 5-2-03 Time: 1000

Customer Sample No.	cpm	mR/hr	wipe	Customer Sample No.	cpm	mR/hr	wipe
B 16W79	240	.028					
B 16W80	240	.036					
B 16W81	240	.027					
B 16W82	240	.027					
B 16W83	240	.026					
B 16W90	240	.027					

Ion Chamber Ser. No. 799574

Alpha Meter Ser. No. 4011

Beta/Gamma Meter Ser. No. _____

Calibration date 12-12-03

Calibration date _____

Calibration date 3-20-03